NRCS West Virginia

Preliminary Investigation Feasibility Report (PIFR)

Three Fork Creek Watershed HUC (0502000106)

December 2023

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Abbreviations

- CFR – Code of Federal Regulations
- NECH – National Environmental Compliance Handbook
- NWPH – National Watershed Program Handbook
- NWPM – National Watershed Program Manual
- PIFR – Preliminary Investigation Feasibility Report

References

- NRCS National Environmental Compliance Handbook, Title 190, Part 610, May 2016
- NRCS National Watershed Program Manual, April 2014
- NRCS National Watershed Program Handbook, April 2014
- DM 9500-013 – Guidance For Conducting Analyses Under The Principles, Requirements, And Guidelines For Water And Land Related Resources Implementation Studies And Federal Water Resource Investments, January 2017
- Principles and Requirements for Federal Investments in Water Resources, March 2013
- NB 390-21-4 PDM - Watershed and Flood Prevention Operations Program Funding Guidance - Preliminary Investigation Feasibility Reports and Remedial Projects, July 2022

Summary

The following PIFR is a summary report of resource concerns and opportunities in the Three Fork Creek Watershed that may be eligible for a planning study according to the Watershed Protection and Flood Prevention Act (PL 83-566). The watershed is in Preston, Taylor, and Monongalia Counties. The Town of Newburg requested formal assistance from the NRCS Watershed Operations Program.

The study area is in the Appalachian Mountains in north central WV. The area is rural, with many small family farms, small communities, and forestland. The Three Fork Creek Watershed contains an outdated dam near the Town of Newburg that is a hazard to recreationalists and a liability to the Town. There are opportunities to remove the dam and restore the stream to natural conditions.

Potential solutions to resource problems and opportunities contained in this report could provide long-term relief with positive impacts to environmental, economic, and social aspects of living in the watershed. The baseline condition without Federal investment is a situation of continued liability to the Town of Newburg, the presence of an outdated dam, and continued limitations to the aquatic and terrestrial condition of the creek. The alternatives that were developed for the PIFR include measures that could reasonably improve the resource condition. The Town of Newburg is a new partner for NRCS. Examples of benefits could include reduced liability, improved stream conditions, improved recreational potential for the creek, and improved stewardship of the watershed.

Applicable Agency Authority and Authorized Purposes

The table below, provides documentation that the project is eligible for federal assistance and will meet statutory requirements.

Describe the potential project watershed area; how does the area meet the requirements outlined in NRCS's National Watershed Program Manual (See 506.50 NWPM Glossary - TTT. Watershed).									
Response: The Town of Newburg requested assistance with conducting a Preliminary Investigation and Feasibility Report (PIFR) for a potential watershed project in the Three Fork Creek Watershed (10-digit HUC (0502000106). This assistance is authorized under the Watershed Protection and Flood Prevention Act (Public Law 83-566). Newburg is interested in being a sponsor for a watershed plan and they meet the PL 83-566 criteria for a sponsor. Agricultural and forested lands compose most of the watershed. Watershed protection, fish and wildlife habitat improvement, and recreation would be the likely purposes of a potential watershed project.									
Will the project area exceed 250,000 acres in size? [1,2]								☐ YES	☒NO
If over 250,000 acres will it be divided into sub-watersheds in one plan?								☐ YES	☒NO
Potential Project Area Size: 64,810 acres									
Will any single structure provide more than 12,500 acre-feet of floodwater detention capacity, or have a 25,000 acre-feet of total capacity?								☐ YES[3]	☒NO
How many recreational developments will be included in the project area?									
• One development in a project area less than 75,000 acres								☐ YES	☒NO
• Two developments in a project area between 75,000 and 150,000 acres								☐ YES	☒NO
• Three developments in a project area greater than 150,000 acres								☐ YES	☒NO
Which authorized purposes will the project address? (Indicate only one purpose as primary):									
							Primary	Other	
• Flood prevention							☐	☐	
• Watershed Protection							☒	☐	
• Public Recreation							☐	☒	
• Public Fish and Wildlife							☐	☒	
• Agricultural Water Management							☐	☐	
• Municipal or Industrial Water Supply							☐	☐	
• Water Quality Management							☐	☐	
Will the project produce substantial benefits to the general public, to communities, and to groups of landowners?								☒YES	☐ NO[3]
Can the project be installed by individual or collective landowners under alternative cost-sharing assistance?								☐ YES[3]	☒NO
Will the project have strong local citizen and sponsor support through agreements to obtain land rights, permits, contribute the local cost of construction, and carry out operation and maintenance.								☒YES	☐ NO[3]
Will the project take place in a Special Designated Area? (if yes, check applicable area below.)								YES	☐NO
Appalachia	☒	Delaware River Basin	☐	Susquehanna River Basin	☐	Tennessee Valley	☐		

1- For specific appropriations, the 250,000 acres is waived except for watershed projects with the flood prevention purpose. 2- Watersheds exceeding 250,000 acres can be broken up into smaller sub-watersheds.

3- The project will not meet the statutory requirements.

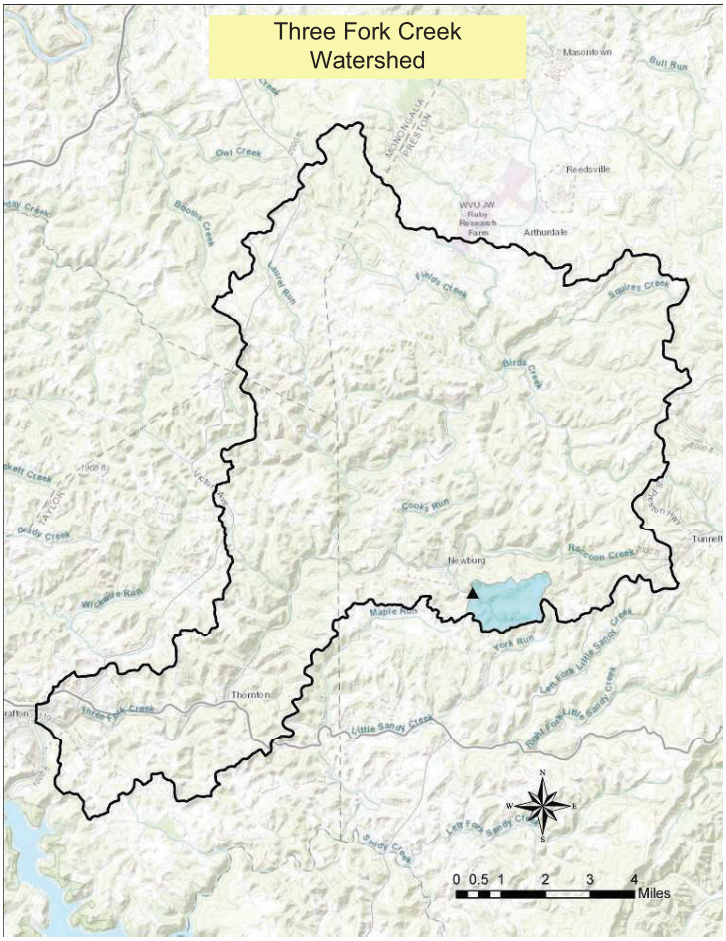
Potential for 20% Agricultural (Rural) Benefits

The largest town in the Three Fork Watershed is Newburg, with a population of 275 persons. The majority of the watershed is in Preston County, with an average population density of 52 people per square mile. In comparison, the average population density for the state of West Virginia is 77 people per square mile and nationally the average is 94 people per square mile. Populations potentially benefitting from a project would include agricultural producers, rural residents, recreationalists, business owners, and the public. The watershed has a population of less than 50,000, thus meeting the definition of rural.

References:

16 USC 18 - §1002, Definitions
Title 390, NWPM – 506.50 Glossary, MMM. Rural or Rural Communities
https://www.census.gov/quickfacts/WV

Project Overview	
Proposed Project Name	Three Fork Creek Watershed - 10-digit HUC (0502000106)
State	West Virginia
County	Preston, Monongalia, and Taylor Counties
Congressional District	2nd Congressional District

USGS Hydrologic Unit Code (HUC) and Watershed Name	 **Map of Three Fork Creek Watershed** **Preston, Monongalia, and Taylor County, WV** 10-digit HUC (0502000106) The Newburg or B&O Dam is located in the Three Fork Creek Watershed. The dam was designed and constructed with a High Hazard Classification in 1904. The dam and associated lake, owned by the Town of Newburg, is currently used for recreation. It is located on Little Racoon Creek and is delineated by blue shading. Total Watershed Drainage Area: 64,810 acres Drainage Area of Newburg Dam: 1,085 acres
General Coordinates of the Watershed	Latitude 39.412872° , Longitude -79.887228°

Project Setting	***Reference:*** Title 190 – NECH 610.69 The Three Fork Creek Subwatershed of the Tygart Valley River Watershed is located in MLRA 126, Central Allegheny Plateau and MLRA 127, Eastern Allegheny Plateau & Mountains. The majority of the watershed is in MLRA 127. The downstream and far western portion of the watershed is located in MLRA 126. Three Fork Creek flows in a southwest direction to its' confluence with the Tygart Valley River at Grafton, West Virginia. The Tygart Valley River joins the West Fork River at Fairmont to form the Monongahela River. The Monongahela River joins the Allegheny River at Pittsburgh to form the Ohio River. The Ohio River eventually joins the Mississippi River at Cairo, Illinois. The Mississippi flows into the Gulf of Mexico. The total watershed drainage area is 64,810 acres. This breaks down to 7,300 Acres in Monongalia County, 18,650 Acres in Taylor County and 38,860 Acres in Preston County. The topography in the watershed ranges from an elevation of 2,427' MSL on the northeastern edge of the watershed in the headwaters of Squires Creek to a low point of approximate elevation 968' MSL at the confluence of Three Fork Creek with the Tygart Valley River at the southwestern edge of the watershed. Communities in the Three Fork Creek watershed include Grafton, Thornton, Newburg, Arthurdale, Gladesville, Irontown, Hardman, Independence, Victoria, Browns Mill, and Lucretia. In general, the portion Three Fork Creek Watershed in MLRA 126, Central Allegheny Plateau, is a highly dissected plateau with a dendritic drainage pattern. The plateau is underlain mainly by horizontal bedded sandstone, coal seams, siltstone, and shale and a few layers of limestone. The narrow, level valleys and narrow, sloping ridgetops are separated by long, steep to very steep side slopes. The ridge tops average about 15 to 30 percent in slope and about 1/8 mile to 1/4 mile in width. The ridges have steep side slopes that average 30 to 45 percent in slope. The stream heads have worked up the slopes so that the ridgetops are usually a series of knobs and saddles. Because of the steep topography that dominates the watershed, hillside creep and geologic erosion have been active. The portion of the watershed in MLRA 127, Eastern Allegheny Plateau & Mountains geology is characterized by mostly flat-lying sedimentary beds. The overall topography is that of a high but strongly dissected plateau sharply cut by Three Fork Creek and less so by smaller tributaries. The rock strata have considerable thickness consisting of sandstone, limestone, and shale. West Virginia has a humid continental climate. North central West Virginia, much like the rest of the state, experiences moderately cold winters and warm, humid summers. West Virginia has the highest average elevation east of the Mississippi River which helps moderate summer temperatures. The jet stream is located near or over the northeast during the winter bringing frequent storm systems to the watershed. Monongalia County, in an average year, receives 43 inches of rain and 28 inches of snow. The average summer high is 84 degrees Fahrenheit in July, and the average winter low is 21 degrees Fahrenheit in January.

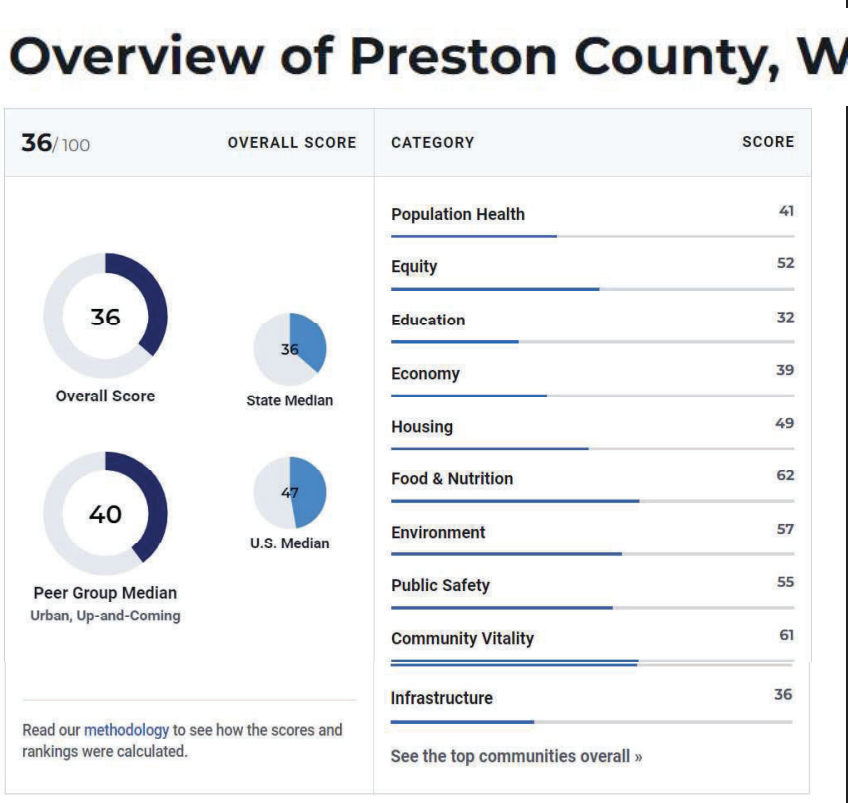
	Preston County, in an average year, receives 50 inches of rain and 75 inches of snow. The average summer high is 81 degrees Fahrenheit in July, and the average winter low is 19 degrees Fahrenheit in January. Taylor County, in an average year, receives 48 inches of rain and 38 inches of snow. The average summer high is 82 degrees Fahrenheit in July, and the average winter low is 21 degrees Fahrenheit in January.
Resource Information	
Soils	The project area lies within Major Land Resource Areas (MLRA) 126 and 127. These MLRA's are characterized by sandstone or shale ridges in the dissected landscapes of the plateau. The soils in this watershed are primarily composed of silt with varying amounts of sand and clay depending on their parent materials. The ridges are mostly formed in residuum derived from interbedded sandstone or shale and are acid. Limestone is occasionally present. They are commonly shallow to moderately deep to bedrock and are moderately well to well drained. Backslopes are formed in colluvium from sandstone, shale, or limestone. These soils are deep to very deep and may have a fragipan that perches water for a portion of the year. These soils are somewhat poor to well drained. The foot slopes, where formed in the red clays are very clayey, deep to very deep, and are prone to slope failures and slope creep, especially when disturbed. Terraces may exist at varying heights above the streams. These soils formed from old alluvium and are typically very deep. They are poorly to moderately well drained and may contain high amounts of clay in the wettest soils. Finally, the floodplain soils formed in the most recent alluvial sediments. These soils are deep to very deep and well to poorly drained. They range from sandy and gravelly to clayey but are mostly loamy or silty. Hydric soils are most likely to occur on the floodplains and terraces but may be found in seeps and drains of higher lying landforms. Surface coverage of rock outcrops or loose stones and boulders may occur especially in areas influenced by sandstone.

Water	Water quality is affected by nutrients, sediment, failing septic systems, abandoned mines, timber production, oil and gas production, barren lands, urban residential areas, unpaved roads, and streambank erosion. The upland areas of the watershed produce high sediment loads during runoff producing rains. Floodplain scour of adjacent floodplains also increase the sediment load of floodwaters during flood events. Public water supply is provided to some public service districts by existing watershed impoundments. There are other public service districts in the watershed that use rivers, which get low in the summer months. The 2016 TMDL recommends an overall fecal coliform load reduction of 8.44E+13 counts/year. 8.17E+13 from pasture and cropland and 2.63E+12 from failing septic systems. The 2016 TMDL also recommends an overall iron load reduction of 1.39E+05 counts/year. 5.20E+04 from abandoned mines, 2.59E+04 from timber production, 2.36E+03 from oil and gas production, 2.32E+04 from barren lands, 233 from urban residential areas, 1.80E+04 from unpaved roads, 5.78E+03 from agriculture, and 1.12E+04 from streambank erosion. The TMDL also recommends an overall aluminum load reduction of 1.80E+05 counts/year from abandoned mines. WV Department of Environmental Protection could not perform water quality monitoring and source characterization at frequencies or sample location resolution sufficient to comprehensively assess water quality under the terms of water quality standards, and modeling was needed to complete the assessment. The table below shows impaired waters for which TMDLs have been developed, the watershed, stream code, stream name, and impairments. The letter M in the table represents streams for which modeling was used.

Subwatershed	Stream Name	NHD Code	Trout	pH	Al	DO	Fe	Be	FC
Three Fork Creek	Three Fork Creek	WV-MT-25		X	M		M		X
Three Fork Creek	Birds Creek	WV-MT-25-AE		X	X		M	X	
Three Fork Creek	Squires Creek	WV-MT-25-AE-1		X	X		X	X	
Three Fork Creek	UNT/Squires Creek RM 2.40	WV-MT-25-AE-1-B		X	X		X		
Three Fork Creek	UNT/Birds Creek RM 0.64	WV-MT-25-AE-2		X	X		X		
Three Fork Creek	UNT/Birds Creek RM 2.57	WV-MT-25-AE-4		M	X				
Three Fork Creek	Fields Creek	WV-MT-25-AF	X	X	X		X		X
Three Fork Creek	Brains Creek	WV-MT-25-AF-3	X				M		X
Three Fork Creek	UNT/Three Fork Creek RM 2.02	WV-MT-25-C					M		X
Three Fork Creek	Rocky Branch	WV-MT-25-E							X
Three Fork Creek	Little Laurel Run	WV-MT-25-N					M		
Three Fork Creek	Raccoon Creek	WV-MT-25-R		X	X		X		
Three Fork Creek	Cooks Run	WV-MT-25-R-2		M	M		M		
Three Fork Creek	Little Raccoon Creek	WV-MT-25-R-5					M		X
Three Fork Creek	Laurel Run	WV-MT-25-V	X				M		X

Air	The watershed is not in an area recognized for regularly having impaired air quality or any significant air quality issues.
Plants	The watershed provides for both agricultural crops as well as naturally vegetated areas utilized as wildlife habitat.
Animals	This area has animal resources consisting of game, non-game, and invasive species.

Energy	This area has various oil and gas wells and an underground coal mine. Oil and gas wells are abundant.
Human	Demographics: Information is included for Preston County, where most of the watershed is located. The U.S. Census 2020 reports the population of Preston County at 34,216, with a slight increase of .4% from 2020 to 2021. In contrast, between the 2010 and 2020 census, the population of West Virginia decreased by 3%. ***Preston County WV Data & Demographics (As of July 1, 2022)*** **POPULATION** Total Population 34,122 (100%) Population in Households 30,763 (90.2%) Population in Families 25,115 (73.6%) Population in Group Quarters[1] 3,359 (9.8%) Population Density 53 Diversity Index[2] 22 **HOUSING** Total HU (Housing Units) 15,266 (100%) Owner Occupied HU 10,795 (70.7%) Renter Occupied HU 2,120 (13.9%) Vacant Housing Units 2,351 (15.4%) Median Home Value $148,500 Average Home Value $190,623 Housing Affordability Index[3] 173 **INCOME** Median Household Income $52,785 Average Household Income $72,612 % of Income for Mortgage[4] 15% Per Capita Income $27,923 Wealth Index[5] 60 **HOUSEHOLDS** Total Households 12,915 Average Household Size 2.38 Family Households 8,769 Average Family Size 3.00 *https://westvirginia.hometownlocator.com/wv/preston/* Quality of Life: According to USNews, Preston County scores slightly better overall than the WV state average in quality-of-life indicators, but less than the national average.



https://www.usnews.com/news/healthiest-communities/west-virginia

Resources of Special Concern	
Clean Water Act	Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered to be waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.
Clean Air Act	The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.
Coastal Zone Management	NA
Coral Reefs	NA
Cultural Resources	There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.
Endangered & Threatened Species	There is a total of 3 Federally listed threatened, endangered, or candidate species potentially found in this watershed listed by the US Fish and Wildlife Service (USFWS). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.

Environmental Justice	Environmental justice seeks fair treatment and meaningful involvement of all people and requires the identification of any disproportionately high and adverse effects from a proposed project on protected groups. Information is presented for Preston County because the majority of the watershed is within that county. Preston County is completely within the Appalachian Region. It is not designated as limited resource counties by USDA. However, it is designated as 'transitional' by the Appalachian Regional Commission, indicating that local economy still need improvement. Distressed Designation and County Economic Status Classification System - Appalachian Regional Commission https://www.arc.gov/ Preston County has less diversity than surrounding counties, with whites comprising 98% of the population. The poverty rate is about 15%, on par with the WV poverty rate of 15.8%. The National poverty rate is 11.4%. U.S. Census Bureau QuickFacts: West Virginia https://www.census.gov/quickfacts
Essential Fish Habitat	NA

Floodplain Management	The purpose of floodplain management is to reduce flood damage. Floodplain management is the operation of community programs for preventative and corrective measures. These measures take a variety of forms and generally include zoning, division or building requirements, and special-purpose floodplain ordinances. Communities agree to adopt and enforce floodplain management ordinances to make flood insurance available to home and business owners. To date, 55 counties and 214 communities in West Virginia have voluntarily adopted and are enforcing local floodplain management ordinances that provide flood loss reduction building standards for new and existing development. Both Monongalia, Preston, & Taylor Counties have a major risk of flooding over the next few decades. In addition to damage on properties, flooding can impact access to utilities, emergency services, transportation, damage to agricultural lands and crops, and adversely impacts the overall well-being of both urban and rural communities located in the floodplain. For Monongalia County there is a: -major flooding risk to 3,747 of 29,296 residences -extreme flooding risk to 904 out of 2,467 miles of roads -extreme risk of flooding to 542 out of 1,813 commercial properties -major risk of flooding to 34 out of 75 infrastructure facilities -moderate risk of flooding to 19 out of 119 social facilities For Preston County there is a: -major flooding risk to 1,993 of 13,216 residences -severe flooding risk to 951 out of 3,317 miles of roads -severe risk of flooding to 125 out of 542 commercial properties -major risk of flooding to 26 out of 58 infrastructure facilities -major risk of flooding to 14 out of 50 social facilities. No similar information is available for Taylor County. The Taylor County Commission enacted a floodplain ordinance on 11/13/2018.

Invasive Species	Invasive species are found in the watershed. EDDMaps provides a web-based mapping system for documenting invasive species and pest distribution. According to USGS there is 1 nonindigenous aquatic species recorded in the watershed. See Appendix E for complete species lists. The lists are not specific to the watershed. However, they are based on a WV county level in which the watershed is located.
Migratory Birds/Bald & Golden Eagle Protection Act	Migratory birds and eagles utilize the Three Fork Creek Watershed habitats. There is a total of 16 federally listed birds in the area. The birds listed are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in the project location. See Appendix E for complete list.
Natural Areas	Federal: There are no federally owned lands within or near the watershed. State: The West Virginia Division of Natural Resources manages Fairfax Pond/Rehe Wildlife Management Area, which is within the watershed. The WV DNR also manages Tygart Lake State Park, Pleasant Creek Wildlife Management Area, Pruntytown State Farm, Valley Falls State Park, Upper Deckers Creek Wildlife Management Area, and Cheat Canyon Wildlife Management Area, which are not within the watershed, but are in close proximity.
Prime and Unique Farmlands	Presently there are 2,779 acres of Prime Farmland, which accounts for 4% of land in the study area. Additionally, there are 1,777 acres of Farmland of Local Importance and 21,286 acres of Farmland of Statewide Importance. Farmland protection boards are actively conserving land in a portion of the watershed. The threat of conversion in the entire watershed, however, is not drastic.
Riparian Area	There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often utilized for agricultural, urban, or residential purposes.
Scenic Beauty	Areas of potential scenic beauty in this watershed are typical of Appalachian Plateau and Allegheny Mountain Section and common to the physiographic regions.
Wetlands	There are 836 acres of wetlands within the Three Fork Creek Watershed which consist of the following: 12 acres of Freshwater Emergent Wetlands; 42 acres of Freshwater Forested/Shrub Wetlands; 89 acres of Freshwater Pond; and 693 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.
Wild and Scenic Rivers	No designated Wild and Scenic Rivers are in or near the project area; however, all trout streams are designated as “Waters of Special Concern” in Preston County.

Proposed Project Purpose and Need Statement

The purpose of the proposed project is to address resource concerns in the Three Fork Creek Watershed where there is an obsolete dam in need of attention. This dam was not constructed by NRCS, but it could be removed to restore stream habitat and riparian conditions. It is anticipated that the PL 566 project purpose will be watershed protection, fish and wildlife habitat, and recreation. The dam is classified as a Class 1, High Hazard Potential dam that could cause loss of life downstream if it were to fail. The dam was built in the early 1900s with little record of materials used in its construction.

Resource Concerns and Opportunities

The Federal Objective or the goal for the planning study according to the Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies (PR&G) is a water resources project that reflects national priorities, protects the environment, and encourages economic development. The Three Fork Creek Watershed contains water resources concerns and opportunities that offer the potential for a watershed project that achieves the Federal Objective.

Resources	**Concerns**	**Opportunities**
Water	• Degraded aquatic habitat • Human health and safety liability • Impaired recreation potential • Hampered watershed stewardship	• Restore natural stream flow • Reconnect aquatic habitat • Enhance recreation • Reduce liability for Town of Newburg
Soil	• Soil loss is likely due to OM depletion, compaction resulting in reduced infiltration on agricultural lands and urban lands, impervious surfaces. Erosion on farms is most likely from overgrazing and bare soil areas.	• Reduce impacts to soils and improve soil health
Air	• No air quality issues present	• Monitor state air data for potential issues
Plant	• Lack of plant species diversity and presence of invasive species.	• Increase of plant diversity with the establishment of native regionally appropriate species.
Animals	• Lack of game and non-game species diversity and habitat diversity	• Provide appropriate game and non- game habitat.

Energy	• No energy issues directly connected to obsolete dam at Newburg	• Monitor opportunities to improve energy efficiencies in the watershed
Human	• Stable to decreasing population • Labor shortages and declining tax base	• Improvements to quality of life
Recreation	• Lack of recreational access • Underutilization of water based recreation potential	• Increase accessibility to recreation for local residents • Increased water recreation opportunities for aging and disabled populations • Improve stewardship of natural resources
Environmental Justice	• Watershed improvements will benefit all racial, ethnic, and economic groups	• Overcome barriers to economic and human development
Cultural Resources / Historic Properties	• Full range of archaeological sites (Paleo- Indian to recent past) and historic properties eligible for listing on the National Registry of Historic Places	• Tribal and SHPO consultation

Potential Effects of Proposed Alternatives on SWAPA + E + H Resources and Resources of Special Concern

+ Positive Impact - Negative Impact 0 No Impact (full effects for Alt 2, 3, 4 unknown at this stage)

Resource Concerns: SWAPA + Energy + Human		
	Alt 1 – No Federal Action: The sponsor does not implement any watershed measures using Federal funds	**Alt 2, 3, 4 – Federal Action**: Combination of measures using federal funds
Soil	**-**	**+**
Water	**-**	**+**
Air	**0**	**+**
Plants	**-**	**+**
Animals	**-**	**+**
Energy	**0**	**+**
Human	**-**	**+**
Clean Air Act	**0**	**+**
Clean Water Act/Waters of the U.S.	**0**	**+**
Coastal Zone Management	**0**	**0**
Coral Reefs	**0**	**0**
Cultural Resources/Historic Properties	**0**	**+**
Endangered & Threatened Species	**0**	**+**
Environmental Justice	**0**	**+**
Essential Fish Habitat	**0**	**0**
Floodplain Management	**0**	**+**
Invasive Species	**0**	**+**
Migratory Birds/Bald and Golden Eagle Protection Act	**0**	**+**
Natural Areas	**0**	**+**

Opportunities

Opportunities exist to provide watershed protection and reduce a public safety hazard by addressing an obsolete dam. The sponsors are willing to participate in the PL-566 Watershed Program, allowing NRCS to potentially implement a combination of practices that are designed to address resource concerns.

Tribal, Federal Stakeholder Engagement

Tribal Name	Date Sent
Catawba Indian Nation	8/1/2023
Cherokee Nation	8/1/2023
Delaware Nation, Oklahoma	8/1/2023
Eastern Band of Cherokee Indians	8/1/2023
Eastern Shawnee Tribe of Oklahoma	8/1/2023
Monacan Indian Nation	8/1/2023
Osage Nation	8/1/2023
Seneca-Cayuga Nation	8/1/2023
Tuscarora Nation	8/1/2023
State Historical Preservation Office	8/1/2023
Key Federal and State Agencies	2/7/2024

Potential Alternatives

During the PIFR process, measures were identified to meet the stated purpose and need for the proposed project and alternatives were formulated according to PR&G criteria of completeness, effectiveness, efficiency, and acceptability. While all the potential alternatives listed may not be carried forward for full analysis during the planning process, this table documents that there are reasonable alternatives available to analyze and develop. The planning team also recognizes that during the planning process the NRCS team and local sponsors are likely to determine that the best alternative for the watershed is a combination of measures.

Alternatives	Possible Positive Impacts and Effects	Possible Adverse Impacts and Effects
Alt 1 – No Action	• No change in watershed feature that is important to local residents • No expenditure of federal or local funds	• Hazardous dam remains in place, jeopardizing human safety • Town remains out of compliance with WVDEP Dam Safety
Alt 2 – Remove Dam (structural)	• Restore stream and riparian habitat • No long term maintenance cost • Return of local tax base with land usage • Short term construction jobs • Majority or all federal funds • Re-introduction of natural occurring sediments back into the stream system • Eliminate liability to the Town • Eliminate a public safety hazard	• Change in riffle and pool complex may change fishing opportunities • Change in scenery may be displeasing to some
Alt 3 – Remove Dam, restore stream, apply land treatment (structural and non structural)	• Restoring stream and riparian habitat • Reduced long term maintenance cost • Short term construction jobs • Majority or all federal funds • Increased outdoor recreation • Relatively low cost • Improved water quality • Increase in fish and wildlife populations • Eliminate public safety hazard • Eliminate liability for the Town	• Change in riffle and pool complex may change fishing opportunities • Change in scenery may be displeasing to some • Loss of a cultural resource to Town

Alt 4 – Remove Dam, create wetlands, add public recreation amenities (structural and nonstructural)	• Restore stream and riparian habitat, create wetlands • No long-term maintenance cost • Return of local tax base with land usage • Short term construction jobs • Majority or all federal funds • Re-introduction of natural occurring sediments back into the stream system • Eliminate liability to the Town • Eliminate a public safety hazard • Provide a recreation opportunity	• Change in riffle and pool complex may change fishing opportunities • Change in scenery may be displeasing to some • Loss of a cultural resource to Town

Facilitating Factors

The Town of Newburg is willing to work with NRCS to see the project through completion.

Obstructing Factors

Local funding may be difficult to achieve due to state appropriations and local government budgets.

Environmental Document

A potentially viable alternative for a proposed watershed project involves the removal of an obsolete dam on Three Fork Creek. Additional needs such as watershed protection and water quality will be assessed in more detail if planning is authorized. At this point in the planning process, the interdisciplinary team has determined that the environmental document for the project may be an Environmental Assessment. However, it is acknowledged that an Environmental Impact Statement could be required if significant or controversial issues arise during further planning.

Sponsors

The Town of Newburg is ready, willing, and able to be a sponsor for a potential watershed project in the Three Fork Creek Watershed. They meet the PL 83-566 sponsorship criteria for this potential watershed project.

All sponsors who take an active role in project will complete the WS-4, PIFR Sponsor Declaration form. A summary of the sponsor responses will be included in this section. Completed WS-4 - PIFR Sponsor Declaration is included in Appendix B.

Sponsor Will:	Assist in Planning	Land Rights / Eminent Doman	Local Cost Share	O/M Funds	Permits	Land Treatment
Town of Newburg	Yes	Yes	Yes	Yes	Yes	Yes

Sponsor will:

- Assist in the locally led planning effort.
- Obtain needed land rights including the use of power of eminent domain, if necessary.
- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs.
- Provide funds for continuing operation and maintenance actions.
- Obtain required permits and approvals at sponsor cost:
- Provide leadership to help ensure adequate conservation land treatment measures are maintained on at least 50% of the watershed area above retention reservoirs.
- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, sponsor will sign a Memorandum of Understanding (MOU) with NRCS.

Potential Cooperating Agencies

Agency	Contact Information	Type of Involvement
US Army Corps of Engineers	USACE – Pittsburgh District 1000 Liberty Avenue, Suite 2200 Pittsburgh, PA 15222	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
US Fish and Wildlife Services	USFWS 6263 Appalachian Highway Davis, WV 26260 501-513-4470 FW5_WVFO@fws.gov	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
West Virginia Department of Environment Protection (WVDEP)	WVDEP 601 57th Street SE Charleston, WV 25304 (304) 926-0499	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]
USDA Farm Service Agency	USDA-FSA 1550 Earl Core Road Morgantown, WV 26505 (304) 284-4800	Regulatory [ ]
		Informed [X]
		Prepare permits or letters of permission document [ ]
		Provide input [ ]
West Virginia Historic Preservation Office (WVSHPO)	WVSHPO Capitol Complex 1900 Kanawha Boulevard, East Charleston, WV 25305-0300 (304) 558-0220	Regulatory [X]
		Informed [X]
		Prepare permits or letters of permission document [X]
		Provide input [X]

Potential Stakeholders

Stakeholder	Role	Resources	Contribution
Town of Newburg	Sponsor	Cost-share funds	For Plan/EA attain permits and assists with Public Scoping Meetings, Mailings, and overall administration of the project.
USDA-NRCS	Lead Agency for Plan-EA, FA/TA, Reviews	Funding assistance, Technical Reviews	Reviews for project location, inventory needs, Plan-EA supplement
Army Corps of Engineers (USACE)	Section 404 permit, Section 10 permit, and section 408 review	Technical Reviews, Wetlands-Waters of the U.S. Jurisdiction	Permitting, technical review
Catawba Indian Nation- Cultural Division Program Manager Caitlin Rogers	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Catawba Indian Nation- Tribal Historic Preservation Officer and Catawba Cultural Center Executive Director Dr. Wenonah G. Haire	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Cherokee Nation- Tribal Historic Preservation Officer Elizabeth Toombs	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Delaware Nation, Oklahoma- Tribal Historic Preservation Officer Katelyn Lucas	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Delaware Nation, Oklahoma- President Deborah Dotson	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Eastern Band of Cherokee Indians- Principal Chief Richard Sneed	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Eastern Band of Cherokee Indians- Tribal Historic Preservation Officer Russell Townsend	Permit- Cultural Review	Review of Project APE	Permit for Project APE

Eastern Shawnee Tribe of Oklahoma- Chief Glenna Wallace	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Eastern Shawnee Tribe of Oklahoma- Tribal Historic Preservations Officer/Director of Culture Preservation Programs/NAGPRA Paul Barton	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Monacan Indian Nation- Chief Diane Shields	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Osage Nation- Director and Tribal Historic Preservation Officer Andrea A. Hunter	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Seneca-Cayuga Nation- Chief Charles Diebold	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Seneca-Cayuga Nation- Tribal Historic Preservations Officer William Tarrant	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Tuscarora Nation- Chief Tom Jonathan	Permit- Cultural Review	Review of Project APE	Permit for Project APE
Tuscarora Nation- Representative Bryan Printup	Permit- Cultural Review	Review of Project APE	Permit for Project APE
West Virginia Historic Preservation Office (WVSHPO)	Permit- Cultural Review	Review of Project APE	Permit for Project APE
WVDEP	Permits	Review for Permits	Review for Permits
WVDNR	Partner	Review of Plan – ED	Review of Plan - ED

Notifications

If a watershed plan – environmental assessment is undertaken, the NRCS must notify publish a notice of intent to the public. Key federal and state agencies as described in the National Watershed Manual were notified on 2/7/2024. (Executive Order 10584 Section 3).

Estimated Project Implementation Timeline

*Dependent on funding

Planning Start	October 2024
Planning End	October 2026
Design Start	December 2026
Design End	December 2027
Construction Start	March 2028
Construction End	November 2028

Additional Information

NRCS met with the Town of Newburg on 2-22-2023 to discuss this report and obtain feedback. At that time, the Town of Newburg indicated they want to retain the dam because it is important to the Town for social and historical reasons. NRCS programs prohibit repair and rehabilitation of dams that were not originally constructed by NRCS. Upon further analysis with other state and federal agencies, the local sponsor is interested in fully evaluating all possible potential alternatives to address the identified resource concerns. One potential viable alternative could be removing the small impoundment to address the concerns. Further analysis and scoping are needed to determine whether other alternatives are viable, such as removal of the dam and creating other recreational opportunities for the public. The structure is too small for water supply and does not provide any downstream flood protection.

Recommendation

This preliminary investigation and feasibility report has been completed and submitted for approval to: Steven Baker, West Virginia Acting State Conservationist.

By: PAMELA YOST Digitally signed by PAMELA YOST Date: 2023.12.01 15:51:42 -05'00'

Name: Pam Yost Title: Economist Date: December 1, 2023

Organization: Natural Resources Conservation Service (NRCS)

It has been determined that this potential PL-566 watershed operations project:

Does	Does Not	
☒	☐	… meet the statutory acreage, volume/capacity of structure and recreational limit requirements;
☒	☐	… meet the requirements of one or more Watershed Operations authorized purposes;
☒	☐	… have the potential for a minimum of 20% agricultural, or rural, benefits;
☒	☐	… have one or more viable alternatives;
☒	☐	… have potential project sponsor(s) that meet and agree to all terms of responsibilities;
☐	☒	… have apparent insurmountable obstacles.

State Watershed Operations Program Manager Signature: CHRISTI HICKS Digitally signed by CHRISTI HICKS Date: 2024.01.16 08:26:08 -05'00' Date: _____

State Technical Lead (SRC, SCE, Other) Signature: LEWTON DEICHERT Digitally signed by LEWTON DEICHERT Date: 2024.01.16 09:41:58 -05'00' Date: _____

	Not recommended for planning funding
X	Accepted and recommended for Planning Funding

State Conservationist Signature: JEFFREY BARR Digitally signed by JEFFREY BARR Date: 2024.01.16 13:21:19 -05'00' Date: _____

Glossary

Rural – All territories of a State that are not within the outer boundary of any city or town that has a population of 50,000 or more according to the latest decennial census of the United States (2010 Census Urban and Rural Classification and Urban Area Criteria). [Source Title 390 – NWPM Part 506.50 Glossary, MMM]

Appendix

- Appendix A: Sponsor Letter of Request
- Appendix B: WS-4 – PIFR Sponsor Declaration Forms
- Appendix C: Preliminary Environmental Evaluation (CPA 52)
- Appendix D: Forecasted NRCS Staffing Needs
- Appendix E: Additional Maps

Appendix A.

Sponsor Letter of Request

69 E Railroad St., P O Box 40
Newburg, West Virginia 26410

Phone/fax: (304) 892-4569
Phone/Messages: (304) 892-3341
Email: townofnewburg88@yahoo.com

June 28, 2022

State Conservationist Jon Bourdon
Natural Resources Conservation Service
1550 Earl Core Road, Suite 200
Morgantown, WV 26505

Dear State Conservationist Bourdon:

We request NRCS Watershed Program planning assistance for a potential Public Law (PL) 83-566 project in Preston County related to the Newburg Dam. This watershed is hydrologic unit code (HUC) 0502000106, Three Fork Creek Watershed. This watershed has an existing dam that is not in compliance, recreational needs, and potentially rural water need that could be addressed by a watershed project. We would like for the NRCS to determine the feasibility of a project for this area. We understand, as sponsors of a PL 83-566 planning effort, that our responsibilities will include:

- Assisting in the locally led planning effort;
- Contributing a share of the project costs, as determined by NRCS, by providing funds or eligible services necessary to undertake the activity;
- Before being credited with the value of any in-kind contributions for in-kind services and/or acquisition of land rights, Sponsor will sign a Memorandum of Understanding (MOU) with NRCS;
- Obtaining any necessary real property rights, by eminent domain,if necessary;
- Obtaining any needed water rights, and regulatory permits at the Sponsor's cost; and
- Agreeing to provide for any required operation and maintenance of the completed measures.

We further understand that there is **no cost** share required for a feasibility report and that the District review and consider its future participation at every step.

We look forward to working with NRCS staff to complete a Preliminary Investigation Feasibility Report (PIFR) to provide reasonable assurance that a potential watershed project can be developed that addresses a PL 83-566 purpose and that there are no apparent insurmountable obstacles to the completion of that project.

The names, addresses, and telephone numbers of the administrative and technical contact persons in our organization are as follows:

Name and Title: Matthew Bainbridge- Senior Project Manager
Address: Civil & Environmental Consultants, Inc.
120 Genesis Blvd. · Bridgeport, WV 26330
Phone number: Office (304) 848-7132 Cell (304) 282-6720
Email: mbainbridge@cecinc.com

Ci Name and Title: Patrick J. Sullivan, Jr., P.E. - Principal
Address: Civil & Environmental Consultants, Inc.,
700 Cherrington Parkway, Moon Township, PA 15108
Phone number: Office 412-249-1574 /Mobile 412-303-8285
Email: psullivan@cecinc.com

Please contact them for any additional information that you might need in assessing our request.

Sincerely,

Edgar Fortney
Mayor of Newburg, WV

cc: Don Dodd, Watershed Planning Specialist, USDA Natural Resources Conservation Service, Beckley, WV
Pam Yost, Watershed Economist, USDA Natural Resources Conservation Service, Morgantown, WV
Julie Stutler, Conservation Partnership Specialist, USDA Natural Resources Conservation Service, Cross Lanes, WV

Appendix B.

PIFR Sponsor Declaration Forms

Watershed Programs Standard Memorandum
Preliminary Investigation – Feasibility Report
Sponsor Authority and Role Declaration

Form Number: WS-4
Version 2021-03-04

State: WV County: Preston Watershed: Three Forks Creek

Project Name: Newburg Dam Three Forks Creek (Town of Newburg)

Sponsor's Name:	**TOWN OF NEWBURG**		
Sponsor's Mailing Address:	**PO Box 40, Newburg, WV 26410**		
Contact Name:	**Edgar Fortney**	**Phone:**	**304-892-4569**
Title:	**Town Mayor**	**Email:**	**townofnewburg88@yahoo.com**
Sponsor Website:	**https://local.wv.gov/newburg/Pages/default.aspx**		

Description of the existing condition in the watershed that would be addressed through a Watershed Flood Prevention Operations program project.

There is an obsolete dam in the Three Forks Watershed that presents a public health hazard. The dam is a liability for the Town of Newburg. There is an opportunity to remove the dam, restore the stream to natural conditions, and improve fish and wildlife habitat. There may be additional opportunities to improve public recreation.

Potential benefits of a Watershed Flood Prevention Operations program project.

Benefits of a project could eliminate a public hazard, relieve the Town of a liability, and improve the watershed resources.

Watershed Programs Standard Memorandum
Preliminary Investigation – Feasibility Report
Sponsor Authority and Role Declaration

Form Number: WS-4
Version 2021-03-04

State: WV County: Preston Watershed: Three Forks Creek

Project Name: Newburg Dam

SPONSOR WILL

- Assist in the locally led planning effort: YES ___X___ NO _____
- Obtain needed land rights including the use of power of eminent domain, if necessary: YES ___X___ NO _____
- Provide local cost-share funds and/or in-kind services to provide the required portion of total project costs: YES ___X___ NO _____
- Provide Funds for continuing Operation and Maintenance actions: YES ___X___ NO _____
- Obtain required permits and approvals at Sponsor cost: YES ___X___ NO _____
- Provide leadership to help ensure adequate conservation land treatment measures are maintained on at least 50% of the watershed area above retention reservoirs: N/A _____ YES ___X___ NO _____
- Before being credited with the value of any in-kind contribution for any in-kind services and/or acquisition of land rights, Sponsor will sign a Memorandum of Understanding (MOU) with NRCS: YES ___X___ NO _____

Authorized Representative of Sponsor

Name (printed): Edgar E. Fortney **Title:** Mayor

Signature: Edgar E. Fortney **Date:** 1-5-24

U.S. Department of Agriculture — NRCS-CPA-52
Natural Resources Conservation Service — 11/2019

ENVIRONMENTAL EVALUATION WORKSHEET

A. Client Name: Town of Newburg

B. Conservation Plan ID # (as applicable): Newburg Dam Removal PIFR
Program Authority (optional): PL-566

D. Client's Objective(s) (purpose):
The purpose of this project is to provide watershed protection and improve fish and wildlife habitat in the Three Fork Creek Watershed.

C. Identification # (farm, tract, field #, etc. as required):
Newburg Dam Removal, Preston, Monongalia, and Taylor Counties, WV (HUC 0502000106)

E. Need for Action:
The existing water impoundment in Three Fork Creek Watershed is no longer functioning as its intended purpose and poses human safety concerns as well as concerns related to fish passage and general aquatic habitat.

H. Alternatives

No Action √ if RMS ☐	√ if RMS ☐	√ if RMS ☐
Fish passage and stream habitat would continue to be negatively impacted by the dam on Little Racoon Creek. The dam would continue to pose a threat to human health and safety. Water quality issues and soil erosion would persist without focused implementation of land based conservation practices.		

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

I. Effects of Alternatives

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	*No Action* — **Amount, Status, Description** *(Document both short and long term impacts)*	√ if does NOT meet PC	**Amount, Status, Description** *(Document both short and long term impacts)*	√ if does NOT meet PC	**Amount, Status, Description** *(Document both short and long term impacts)*	√ if does NOT meet PC
SOIL						
Sheet and rill erosion Natural sediment transport by stream is blocked by obsolete dam. Erosion and sediment deposition altered by manmade structure.	Continued degradation of the resource without any federal action.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
WATER						
Ponding and flooding Water flow is impeded by manmade dam. Dam does not retain floodwater. There is no effect on flooding.	Residences, businesses, and agricultural lands would continue to endure periodic flooding as storm frequency and intensity trends continue.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC

Sediment transported to surface water Sedimentation caused by erosion in the uplands of the watershed negatively impact Three Fork Creek and its tributaries. Sediment loading contributes to reduced channel capacity.	Resources would continue to be degredated. The dam would not allow for the stream flow to function as normal, causing unnatural scouring and sediment deposits	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
Nutrients transported to surface water Water quality is negatively affected by nutrients, failing septic systems, abandoned mines, timber production, oil and gas production, barren lands, unpaved roads, streambank erosion, and runoff from rural landscapes within the watershed. Many streams within the watershed have elevated levels of fecal coliform from pasture/cropland, failing septic systems, and residential stormwater sources. There are also elevated levels of aluminum and iron.	Continued degradation of the resource without any federal action. Upland contaminants from agricultural operations and residences would continue to negatively effect water quality.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	**I. (continued)** ***No Action***					
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
AIR						
No resource concern identified The watershed is not in an area recognized for regularly having impaired air quality or any significant air quality issues.	Air quality would not be impacted with no action.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
PLANTS						
Plant structure and composition The watershed provides for both agricultural crops as well as naturally vegetated areas that provide wildlife habitat.	Riparian area composition would continue to be impacted by invasive species.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
ANIMALS						
Terrestrial habitat for wildlife and invertebrates Game and non-game species of wildlife are found within the watershed, however habitat is not ideal. There are 3 threatened, endangered, or candidate species found in the watershed.	Wildlife would continue to be impacted by invasive species competition with native species that provide habitat, food, and cover.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC

Aquatic habitat for fish and other organisms Sedimentation and nutrients are negatively effecting aquatic fish and invertebrate species habitat.	Continued degradation of the resources with continued sedimentation in the stream negatively impacting aquatic invertebrate habitat.	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
ENERGY						
No resource concern identified This area has various oil and gas wells and an underground coal mine. Oil and gas wells are abundant.	No effect	☐ NOT meet PC		☐ NOT meet PC		☐ NOT meet PC
Human Economic and Social Considerations						
Public Health and Safety The presence of the dam poses a threat to public health and safety as it creates abnormal and dangerous flow conditions and currents.	There would continue to be a threat to public safety as well as missed recreation opportunity due to the overall health and structure of the stream.					

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "•" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	J. Impacts to Special Environmental Concerns					
	No Action					
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
•Clean Air Act *Guide Sheet* The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.	No Effect	☐		☐		☐
•Clean Water Act / Waters of the U.S. *Guide Sheet* Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered as waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.	No Effect	☐		☐		☐
•Coastal Zone Management *Guide Sheet* There are no costal zones present in or near the watershed.	No Effect	☐		☐		☐

Coral Reefs *Guide Sheet* There are no coral reefs present in or near the watershed.	No Effect	☐		☐		☐
●Cultural Resources / Historic Properties *Guide Sheet* There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	No Effect	☐		☐		☐
●Endangered and Threatened Species *Guide Sheet* There is a total of 3 Federally listed threatened, endangered, or candidate species potentially found in this watershed listed by the US Fish and Wildlife Service (USFWS). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.	No action may have the potential to negatively impact federally listed aquatic species through continued sedimentation and habitat destruction.	☐		☐		☐
Environmental Justice *Guide Sheet* Preston, Monongalia, and Taylor Counties is completely within the Appalachian Region. This county is not designated as limited resource counties by USDA. However, it is designated as 'at risk' by the Appalachian Regional Commission, indicating that the local economy is not strong. Preston, Monongalia, and Taylor Counties is 90.8% white. Black or African American residents comprising less than 6.2% of the population. The poverty rate is 15.1%, below the WV poverty rate of 15.8% and above the national rate of 11.4%.	No Effect	☐		☐		☐

•Essential Fish Habitat *Guide Sheet* This area is not designated as Essential Fish Habitat.	No Effect	☐		☐		☐
Floodplain Management *Guide Sheet* Monongalia, Preston, and Taylor Counties has a major risk of flooding over the next few decades.	No Effect	☐		☐		☐
Invasive Species *Guide Sheet* Invasive species are found in the watershed.	No Effect Continued expansion on invasive species.	☐		☐		☐
•Migratory Birds/Bald and Golden Eagle Protection Act *Guide Sheet* Migratory birds and eagles utilize the Three Fork Creek Watershed habitats. There is a total of 16 federally listed birds in the area. The birds listed are birds of particular concern either because they occur on the USFWS Bids of Conservation Concern (BCC) list or warrant special attention in the project location.	No Effect	☐		☐		☐
Natural Areas *Guide Sheet* Federal: There are no federally owned lands within or near the watershed. State: The West Virginia Division of Natural Resources manages Fairfax Pond/Rehe Wildlife Management Area, which is within the watershed. The WV DNR also manages Tygart Lake State Park, Pleasant Creek Wildlife Management Area, Pruntytown State Farm, Valley Falls State Park, Upper Deckers Creek Wildlife Management Area, and Cheat Canyon Wildlife Management Area, which are not within the watershed, but are in close proximity.	No Effect	☐		☐		☐
Prime and Unique Farmlands *Guide Sheet* Presently there are 2,779 acres of Prime Farmland, which accounts for 4% of land in the study area. Additionally, there are 1,777 acres of Farmland of Local Importance and 21,286 acres of Farmland of Statewide Importance. Farmland protection boards actively conserving land in the watershed.	No Effect	☐		☐		☐
Riparian Area *Guide Sheet* There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often forested or utilized as agricultural, urban, or residential purposes.	No Effect Continued degradation of riparian land as streambanks erode and invasive species dominate regrowth.	☐		☐		☐

Scenic Beauty *Guide Sheet* Areas of potential scenic beauty in this watershed are typical of Appalachian Plateau and Allegheny Mountain Section and common to the physiographic regions.	No Effect	☐		☐		☐
•Wetlands *Guide Sheet* There are 836 acres of wetlands within the Three Fork Creek Watershed which consist of the following: 12 acres of Freshwater Emergent Wetlands; 42 acres of Freshwater Forested/Shrub Wetlands; 89 acres of Freshwater Pond; and 693 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.	No Effect	☐		☐		☐
•Wild and Scenic Rivers *Guide Sheet* No designated Wild and Scenic Rivers are in or near the project area; however, all trout streams are designated as "Waters of Special Concern" in Preston County.	No Effect	☐		☐		☐
K. Other Agencies and Broad Public Concerns	***No Action***					
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	None					
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)	Absent the proper and increased application of conservation practices, cumulative effects will likely lead to continued environmental degradation.					
L. Mitigation (Record actions to avoid, minimize, and compensate)	None					
M. Preferred Alternative √ preferred alternative	☐		☐		☐	
Supporting reason						
N. Context (Record context of alternatives analysis)	local					
The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.						

U.S. Department of Agriculture | NRCS-CPA-52
Natural Resources Conservation Service | 11/2019

ENVIRONMENTAL EVALUATION WORKSHEET

A. Client Name: Town of Newburg

B. Conservation Plan ID # (as applicable): Newburg Dam PIFR
Program Authority (optional): PL-566

D. Client's Objective(s) (purpose):
The purpose of this project is to provide watershed protection and improve fish and wildlife habitat in the Three Fork Creek Watershed.

C. Identification # (farm, tract, field #, etc. as required):
Newburg Dam Removal, Preston, Monongalia, and Taylor Counties, WV (HUC 0502000106)

E. Need for Action:
The existing water impoundment in Three Fork Creek Watershed is no longer functioning as its intended purpose and poses human safety concerns as well as concerns related to fish passage and general aquatic habitat.

H. Alternatives

Alternative 2 √ if RMS ☐	*Alternative 3* √ if RMS ☐	*Alternative 4* √ if RMS ☐
Remove dam, restore natural stream conditions (Alt 2 in the PIFR)	Remove Dam, restore stream, apply land treatment (Alt 3 in PIFR)	Remove Dam, create wetlands, add public recreation amenitities (Alt 4 in PIFR)

Resource Concerns

In Section "F" below, analyze, record, and address concerns identified through the Resources Inventory process. (See FOTG Section III - Resource Planning Criteria for guidance).

I. Effects of Alternatives

F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	*Alternative 2* — **Amount, Status, Description** *(Document both short and long term impacts)*	*Alternative 2* — √ if does NOT meet PC	*Alternative 3* — **Amount, Status, Description** *(Document both short and long term impacts)*	*Alternative 3* — √ if does NOT meet PC	*Alternative 4* — **Amount, Status, Description** *(Document both short and long term impacts)*	*Alternative 4* — √ if does NOT meet PC
SOIL						
Sheet and rill erosion Natural sediment transport by stream is blocked by obsolete dam. Erosion and sediment deposition altered by manmade structure.	Removal of dam and watershed restoration would decrease erosion and sediment.	☐ NOT meet PC	Removal of dam and watershed restoration would decrease erosion and sediment. Land treatment may be applied to further address erosion and sediment issues.	☐ NOT meet PC	Removal of dam and watershed restoration would decrease erosion and sediment. Land treatment may be applied to further address erosion and sediment issues.	☐ NOT meet PC
WATER						
Ponding and flooding Water flow is impeded by manmade dam. Dam does not retain floodwater. There is no effect on flooding.	Removal of dam would restore natural stream flow. Action would have no effect on flooding.	☐ NOT meet PC	Removal of dam would restore natural stream flow. Action would have no effect on flooding.	☐ NOT meet PC	Removal of dam would restore natural stream flow. Action would have no effect on flooding.	☐ NOT meet PC

Sediment transported to surface water Sedimentation caused by erosion in the uplands of the watershed negatively impact Three Fork Creek and its tributaries. Sediment loading contributes to reduced channel capacity.	There would be a reduction in sediments in the watershed. Water quality would be beneficially effected and result in more outdoor recreation opportunities.	☐ NOT meet PC	There would be a reduction in sediments in the watershed. Water quality would be beneficially effected and result in more outdoor recreation opportunities.	☐ NOT meet PC	Strategic installation of land treatment practices, natural stream restoration and green infrastructure as well as removal of obsolete dam would reduce sediment loads in waterways.	☐ NOT meet PC
Nutrients transported to surface water Water quality is negatively affected by nutrients, failing septic systems, abandoned mines, timber production, oil and gas production, barren lands, unpaved roads, streambank erosion, and runoff from rural landscapes within the watershed. Many streams within the watershed have elevated levels of fecal coliform from pasture/cropland, failing septic systems, and residential stormwater sources. There are also elevated levels of aluminum and iron.	Long term effects of dam removal will be an improvement in water quality. Water will not be impounded, therefore allowing for dissipation of nutrients downstream.	☐ NOT meet PC	Long term effects of dam removal will be an improvement in water quality. Water will not be impounded, therefore allowing for dissipation of nutrients downstream. Natural stream restoration and land treatment will reduce nutrients entering the stream.	☐ NOT meet PC	Long term effects of dam removal will be an improvement in water quality. Water will not be impounded, therefore allowing for dissipation of nutrients downstream. Natural stream restoration and land treatment will reduce nutrients entering the stream.	☐ NOT meet PC
F. Resource Concerns and Existing/ Benchmark Conditions (Analyze and record the existing/benchmark conditions for each identified concern)	**I. (continued)**					
	Alternative3		***Alternative 3***		***Alternative 4***	
	Amount, Status, Description *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**	**Amount, Status, Description** *(Document both short and long term impacts)*	**√ if does NOT meet PC**
AIR						
No resource concern identified The watershed is not in an area recognized for regularly having impaired air quality or any significant air quality issues.	Localized odors and particulate matter concerns could be addressed through conservation practices such as Windbreaks/Shelterbelts.	☐ NOT meet PC	No effect	☐ NOT meet PC	Air quality may be slightly adversely impacted locally during construction activities (dust and exhaust from construction equipment). The increases are expected to remain well within the air quality standards and would be temporary.	☐ NOT meet PC
PLANTS						
Plant structure and composition The watershed provides for both agricultural crops as well as naturally vegetated areas that provide wildlife habitat.	Plant structure and composition would benefit from Forest Stand Improvement in the watershed.	☐ NOT meet PC	Plant structure and composition would be improved through the installation of green infrastructure- wetlands, rain gardens, tree plantings, etc.	☐ NOT meet PC	Plant structure and composition would be improved through the installation of green infrastructure- wetlands, rain gardens, tree plantings, etc.	☐ NOT meet PC
ANIMALS						
Terrestrial habitat for wildlife and invertebrates Game and non-game species of wildlife are found within the watershed, however habitat is not ideal. There are 3 threatened, endangered, or candidate species found in the watershed.	Terrestrial wildlife habitat would be improved through a higher quality natural habitat with the dam removal.	☐ NOT meet PC	Terrestrial habitat would be improved through the installation of green infrastructure- wetlands, rain gardens, tree plantings, etc.	☐ NOT meet PC	Terrestrial habitat would be improved through the implementation of wildlife oriented land treatment practices, riparian areas created as part of natural stream restoration and green infrastructure, and creation/enhancement of wetlands. Aquatic organism passage would be increased with the removal of dam.	☐ NOT meet PC

Aquatic habitat for fish and other organisms Sedimentation and nutrients are negatively effecting aquatic fish and invertebrate species habitat.	Aquatic habitat would be improved by removing an obsolete dam and restoring the stream to natural flow conditions.	☐ NOT meet PC	Aquatic habitat would be improved by removing an obsolete dam and restoring the stream to natural flow conditions. Aquatic habitat would also benefit from enhancement and installation of wetlands.	☐ NOT meet PC	Aquatic habitat would be improved by removing an obsolete dam and restoring the stream to natural flow conditions. Aquatic habitat would also benefit from enhancement and installation of wetlands.	☐ NOT meet PC
ENERGY						
No resource concern identified This area has various oil and gas wells and an underground coal mine. Oil and gas wells are abundant.	No effect	☐ NOT meet PC	No effect	☐ NOT meet PC	No effect	☐ NOT meet PC
Human Economic and Social Considerations						
Public Health and Safety The presence of the dam poses a threat to public health and safety as it creates abnormal and dangerous flow conditions and currents.	Dam removal will remove a safety hazard and reduce liability to the Town of Newburg. The dam is out of compliance.		Dam removal will remove a safety hazard and reduce liability to the Town of Newburg. The dam is out of compliance.		Dam removal will remove a safety hazard and reduce liability to the Town of Newburg. The dam is out of compliance.	

Special Environmental Concerns: Environmental Laws, Executive Orders, policies, etc.

In Section "G" complete and attach Environmental Procedures Guide Sheets for documentation as applicable. Items with a "•" may require a federal permit or consultation/coordination between the lead agency and another government agency. In these cases, effects may need to be determined in consultation with another agency. Planning and practice implementation may proceed for practices not involved in consultation.

G. Special Environmental Concerns (Document existing/ benchmark conditions)	**J. Impacts to Special Environmental Concerns**					
	Alternative 2		***Alternative 3***		***Alternative 4***	
	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action	Document all impacts (Attach Guide Sheets as applicable)	√ if needs further action
•Clean Air Act *Guide Sheet* The watershed is not in an area recognized for regularly having impaired air quality or significant air quality issues.	No Effect Land treatment practices are not likely to negatively effect air quality.	☐	May Affect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐	May Affect It is likely that no permitting or authorization is necessary. The activity is expected to only have minor local impacts to air quality during construction and would not be expected to violate standards. Advise the client to contact the appropriate air quality regulatory agency for verification.	☐
•Clean Water Act / Waters of the U.S. *Guide Sheet* Permitted actions may involve or likely result in the discharge or placement of dredged or fill material in or other pollutants into waters of the US. Ephemeral, intermittent, and perennial streams and certain wetlands will be considered as waters of the US. Mitigation for unavoidable impacts should be expected under Sec. 404 of the Clean Water Act.	No Effect Land treatment practices are not likely to negatively effect Waters of the US.	☐	May Affect Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins.	☐	May Affect Installation of any water control structures will involve the placement of fill material in streams and must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins. Mitigation for stream impacts may also be required.	☐
•Coastal Zone Management *Guide Sheet* There are no costal zones present in or near the watershed.	No Effect	☐	No Effect	☐	No Effect	☐

Coral Reefs *Guide Sheet* There are no coral reefs present in or near the watershed.	No Effect	☐	No Effect	☐	No Effect	☐
●Cultural Resources / Historic Properties *Guide Sheet* There are known cultural, archeological, and historically significant resources throughout the watershed. Consultation with Tribal Nations, West Virginia State Historic Preservation Officer, and other interested parties with vested interests in a yet to be determined area of potential effect will be conducted according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐	No Effect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐	May Affect Consultation with Tribal Nations, West Virginia State Historic Preservation Office (SHPO), and other interested parties will be conducted in according to Section 106 of the National Historical Preservation Act (NHPA) of 1966, as amended.	☐
●Endangered and Threatened Species *Guide Sheet* There is a total of 3 Federally listed threatened, endangered, or candidate species potentially found in this watershed listed by the US Fish and Wildlife Service (USFWS). According to West Virginia Department of Natural Resources (WVDNR), WV is a permanent home to 22 federally endangered species (17 animals, 4 plants) and 7 federally threatened species (5 animals, 2 plants). WVDNR's State Wildlife Action Plan (SWAP) recognizes 22 Conservation Focus Areas (CFA) throughout the state that includes Species of Greatest Conservation Need (SGCN). See Appendix E for a complete USFWS IPaC Species list, WVDNR state listings, map of WV CFAs, and a list of SGCN for this watershed.	May Affect This alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Conservation practices will be evaluated on a plan by plan basis through the Interagency Coordinator Tool and all required avoidance strategies will be followed.	☐	May Affect This alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐	May Affect The structural alternative is not expected to create an adverse impact to threatened, endangered, or rare species. Federal, state, and local wildlife agencies will be consulted prior to construction.	☐
Environmental Justice *Guide Sheet* Preston, Monongalia, and Taylor Counties is completely within the Appalachian Region. This county is not designated as limited resource counties by USDA. However, it is designated as 'at risk' by the Appalachian Regional Commission, indicating that the local economy is not strong. Preston, Monongalia, and Taylor Counties is 90.8% white. Black or African American residents comprising less than 6.2% of the population. The poverty rate is 15.1%, below the WV poverty rate of 15.8% and above the national rate of 11.4%.	May Affect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐	No Effect No negative impacts are anticipated. The project would benefit historically underserved residents, landowners, and communities.	☐

•Essential Fish Habitat *Guide Sheet* This area is not designated as Essential Fish Habitat.	No Effect	☐	No Effect	☐	No Effect	☐
Floodplain Management *Guide Sheet* Preston, Monongalia, and Taylor Counties has a major risk of flooding over the next few decades.	No Effect Land treatment practices are not likely to negatively effect flood plains.	☐	No Effect Land treatment practices are not likely to negatively effect flood plains.	☐	May Affect Land treatment practices are not likely to negatively effect flood plains.	☐
Invasive Species *Guide Sheet* Invasive species are found in the watershed.	May Affect Invasive species occur within the watershed and would be controlled through scheduled land treatment activates on privately owned or operated lands.	☐	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐	May Affect Invasive species occur within the watershed. Care would be taken not to introduce invasive species in disturbed areas.	☐
•Migratory Birds/Bald and Golden Eagle Protection Act *Guide Sheet* Migratory birds and eagles utilize the Three Fork Creek Watershed habitats. There are 16 federally listed birds in the area. The birds listed are of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in the project location.	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐	No Effect Actions will not result in intentional or unintentional take of any migratory bird, nest, or egg.	☐
Natural Areas *Guide Sheet* Federal: There are no federally owned lands within or near the watershed. State: The West Virginia Division of Natural Resources manages Fairfax Pond/Rehe Wildlife Management Area, which is within the watershed. The WV DNR also manages Tygart Lake State Park, Pleasant Creek Wildlife Management Area, Pruntytown State Farm, Valley Falls State Park, Upper Deckers Creek Wildlife Management Area, and Cheat Canyon Wildlife Management Area, which are not within the watershed, but are in close proximity.	No Effect	☐	No Effect	☐	No Effect	☐
Prime and Unique Farmlands *Guide Sheet* Presently there are 2,779 acres of Prime Farmland, which accounts for 4% of land in the study area. Additionally, there are 1,777 acres of Farmland of Local Importance and 21,286 acres of Farmland of Statewide Importance. Farmland protection boards actively conserving land in the watershed.	No Effect Conversion of prime and unique farmlands is not anticipated with this alternative.	☐	No Effect Conservation of prime and unique farmlands is not anticipated with this alternative.	☐	No Effect Alternative would provide protection of prime farmland through the reduction of streambank erosion, sheet and rill erosion, and sedimentation of streams.	☐
Riparian Area *Guide Sheet* There are riparian areas present in or near the project area. Riparian areas found in this region are generally characterized as vegetated and un-vegetated. These areas are often forested or utilized as agricultural, urban, or residential purposes.	May Affect Riparian areas will be enhanced as part of this alternative.	☐	May Affect Riparian areas will be enhanced as part of this alternative.	☐	May Affect Riparian areas would be enhanced through the installation of natural stream restoration, land treatment programs, and green infrastructure.	☐

Scenic Beauty *Guide Sheet* Areas of potential scenic beauty in this watershed are typical of Appalachian Plateau and Allegheny Mountain Section and common to the physiographic regions.	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Appalachian Plateau physiographic province.	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Appalachian Plateau physiographic province.	☐	No Effect Action is not likely to negatively affect the scenic beauty of the area or alter the unique landscapes of the Appalachian Plateau physiographic province.	☐
•Wetlands *Guide Sheet* There are 836 acres of wetlands within the Three Fork Creek Watershed which consist of the following: 12 acres of Freshwater Emergent Wetlands; 42 acres of Freshwater Forested/Shrub Wetlands; 89 acres of Freshwater Pond; and 693 acres of Riverine. Data collected from the US Fish and Wildlife Service National Wetlands Inventory.	No Effect Action is not likely to negatively impact any wetlands in the watershed.	☐	No Effect Action is likely to have a positive impact on wetlands.	☐	May Affect Alternative would enhance the values and functions of wetlands and surrounding ecosystems.	☐
•Wild and Scenic Rivers *Guide Sheet* No designated Wild and Scenic Rivers are in or near the project area; however, all trout streams are designated as "Waters of Special Concern" in Preston County.	No Effect	☐	No Effect	☐	No Effect	☐

K. Other Agencies and Broad Public Concerns	***Alternative 2***	***Alternative 3***	***Alternative 4***
Easements, Permissions, Public Review, or Permits Required and Agencies Consulted.	Installation of all land treatment practices will comply with all applicable local, state, and federal laws. Any required permits will be obtained prior to construction.	Implementation of all infrastructure must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins.	Implementation of all infrastructure must comply with all applicable local, state, and federal laws. Compliance will require permits and must be obtained before construction begins.
Cumulative Effects Narrative (Describe the cumulative impacts considered, including past, present and known future actions regardless of who performed the actions)	Strategic installation of all previously evaluated alternatives across the watershed will improve the areas overall resilience and improve quality of life for the ecosystems and the residents.	Strategic installation of all previously evaluated alternatives across the watershed will improve the areas overall resilience and improve quality of life for the ecosystems and the residents.	Strategic installation of all previously evaluated alternatives across the watershed will improve the areas overall resilience and improve quality of life for the ecosystems and the residents.
L. Mitigation (Record actions to avoid, minimize, and compensate)	None	None	None
M. Preferred Alternative — √ preferred alternative	☑	☐	☐
M. Preferred Alternative — Supporting reason	Dam removal will remove a safety hazard and reduce liability to the Town of Newburg. The dam is out of compliance.		
N. Context (Record context of alternatives analysis)	local	local	local

The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality.

O. To the best of my knowledge, the data shown on this form is accurate and complete:

In the case where a non-NRCS person (e.g. a TSP) assists with planning they are to sign the first signature block and then NRCS is to sign the second block to verify the information's accuracy.

PAMELA YOST Digitally signed by PAMELA YOST Date: 2023.12.01 15:49:38 -05'00'		Economist	
Signature (TSP if applicable)		**Title**	**Date**
CHRISTI HICKS Digitally signed by CHRISTI HICKS Date: 2024.01.16 08:20:46 -05'00'			
Signature (NRCS)		**Title**	**Date**

If preferred alternative is not a federal action where NRCS has control or responsibility and this NRCS-CPA-52 is shared with someone other than the client then indicate to whom this is being provided.

The following sections are to be completed by the Responsible Federal Official (RFO)

NRCS is the RFO if the action is subject to NRCS control and responsibility (e.g., actions financed, funded, assisted, conducted, regulated, or approved by NRCS). These actions do not include situations in which NRCS is only providing technical assistance because NRCS cannot control what the client ultimately does with that assistance and situations where NRCS is making a technical determination (such as Farm Bill HEL or wetland determinations) not associated with the planning process.

P. Determination of Significance or Extraordinary Circumstances

To answer the questions below, consider the severity (intensity) of impacts in the contexts identified above. Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

If you answer ANY of the below questions "yes" then contact the State Environmental Liaison as there may be extraordinary circumstances and significance issues to consider and a site specific NEPA analysis may be required.

Yes	No	
☐	☒	• Is the preferred alternative expected to cause significant effects on public health or safety?
☑	☐	• Is the preferred alternative expected to significantly affect unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?
☑	☐	• Are the effects of the preferred alternative on the quality of the human environment likely to be highly controversial?
☐	☒	• Does the preferred alternative have highly uncertain effects or involve unique or unknown risks on the human environment?
☐	☒	• Does the preferred alternative establish a precedent for future actions with significant impacts or represent a decision in principle about a future consideration?
☐	☒	• Is the preferred alternative known or reasonably expected to have potentially significant environment impacts to the quality of the human environment either individually or cumulatively over time?
☐	☒	• Will the preferred alternative likely have a significant adverse effect on ANY of the special environmental concerns? Use the Evaluation Procedure Guide Sheets to assist in this determination. This includes, but is not limited to, concerns such as cultural or historical resources, endangered and threatened species, environmental justice, wetlands, floodplains, coastal zones, coral reefs, essential fish habitat, wild and scenic rivers, clean air, riparian areas, natural areas, and invasive species.
☐	☒	• Will the preferred alternative threaten a violation of Federal, State, or local law or requirements for the protection of the environment?

Q. NEPA Compliance Finding (check one)

The preferred alternative:		**Action required**
☐	1) is **not a federal action** where the agency has control or responsibility.	Document in "R.1" below. No additional analysis is required
☐	2) is a federal action **ALL** of which is **categorically excluded** from further environmental analysis **AND** there are **no extraordinary circumstances as identified in Section "P".**	Document in "R.2" below. No additional analysis is required
☐	3) is a federal action that has been **sufficiently analyzed** in an existing Agency state, regional, or national NEPA document **and** there are no predicted significant adverse environmental effects or extraordinary circumstances.	Document in "R.1" below. No additional analysis is required.
☐	4) is a federal action that has been sufficiently analyzed in another Federal agency's NEPA document (EA or EIS) that addresses the proposed NRCS action and its' effects **and has been formally adopted by NRCS**. NRCS is required to prepare and publish its own Finding of No Significant Impact for an EA or Record of Decision for an EIS when adopting another agency's EA or EIS document. **(Note: This box is not applicable to FSA)**	Contact the State Environmental Liaison for list of NEPA documents formally adopted and available for tiering. Document in "R.1" below. No additional analysis is required
☑	5) is a federal action that has **NOT** been sufficiently analyzed or may involve predicted significant adverse environmental effects or extraordinary circumstances and may require an EA or EIS.	Contact the State Environmental Liaison. Further NEPA analysis required.

R. Rationale Supporting the Finding	
R.1 Findings Documentation	
R.2 Applicable Categorical Exclusion(s) **(more than one may apply)** 7 CFR Part 650 *Compliance With NEPA* , subpart 650.6 *Categorical Exclusions* states prior to determining that a proposed action is categorically excluded under paragraph (d) of this section, the proposed action must meet six sideboard criteria. See NECH 610.116.	

I have considered the effects of the alternatives on the Resource Concerns, Economic and Social Considerations, Special Environmental Concerns, and Extraordinary Circumstances as defined by Agency regulation and policy and based on that made the finding indicated above.

S. Signature of Responsible Federal Official:

JEFFREY BARR Digitally signed by JEFFREY BARR
Date: 2024.01.16 13:25:01 -05'00'

Signature	Title	Date

Additional notes

Appendix D.

Forecasted NRCS Staffing Needs

Three Fork Creek Staffing Needs

	Planner	Engineer	Engineer	Biologist	Economist	Admin Asst
Phase 1 -Identify Problems, Opportunities, & Concerns						
Final plan of work	30	16	16	16	16	6
Public Participation plan	20	12	12	12	12	2
Gather Data	50	50	50	50	50	20
Consultation List	6				12	2
Final assessment	18	18	18	18	18	6
Total	**124**	**96**	**96**	**96**	**108**	**36**
Phase 2 -Determine Objectives						
Document Sponsor Objectives	6	6	6	6	6	2
Write purpose & Need statement	10	6	6	6	6	4
Agency consultation/coordination	12	12	12	12	12	4
Tribal consultation	20				20	4
Scoping public meeting	12	10	10	10	10	4
Write scope of plan	10	10	10	10	10	8
Total	**70**	**44**	**44**	**44**	**64**	**26**
Phase 3 -Inventory Resources						
Resource Inventories & watershed assessment						
Economic & Social Assessment						
Collect Population Demographics					15	2
Identify effcts to public health & safety					16	2
Identify effcts to homes, businesses & ag operations					80	6
Identify visual concerns					15	2
Collect economic data					40	4
Identify non-NEPA laws related to project	4	4	4	4	6	2
Identify approved regional water resource plans in project	2	2	2	2	2	2
Final economic and social assessment					60	6
Archaeological & Historic Assessment						
Literature review				240		10
Coordination with State Historic Preservation Officer				80		6
Final archaeologcial and historic assessment				350		10
Geologic Assessment & Engineering Assessment						
Review existing geologic investigations		20	20			
Enigneering Surveys		80	80			
Evaluate condition of existing structures		30	30			
Final geologic assessment and engineering assessment		100	100			
Total	**6**	**236**	**236**	**676**	**234**	**52**

Three Fork Creek Staffing Needs

	Planner	Engineer	Engineer	Biologist	Economist	Admin Asst
Phase 4 -Analyze Resource Data						
Develop resource existing conditions	20	20	20	20	20	6
Economic & Social Assessment						
Quantify onsite/offsite damages					100	6
Economics and social effects (future without project condition)					40	6
Archaeological & Historic Assessment				16		
Geologic Assessment & Engineering Assessment						
Determine geologic investigation needs		40	40			
Review existing hydrology /hydraulic models		40	40			
Determine watershed conditions (CN, Tc, rainfall)		80	80			
Run preliminary hydraulics		40	40			
Develop hydrologic model for watershed		60	60			
Run hydrologic models		60	60			
Total	**20**	**340**	**340**	**36**	**160**	**18**
Phase 5 -Formulate Alternatives						
Analysis of initial alternatives						
Document alternatives eliminated from detailed study	10	12	12	8	8	10
Document reasonable alternatives	10	12	12	10	10	10
Identify permits, licenses, other entitlements required	4	4	4	4	4	2
Define mitigation strategies	8	6	6	10	10	4
Determine project costs for each alternative		22	22			4
Final plan of work	8	4	4	4	4	2
Final initial alternatives report	50	50	50	50	50	10
Total	**90**	**110**	**110**	**86**	**86**	**42**

Three Fork Creek Staffing Needs

Phase 6 -Evaluate Alternatives	**Planner**	**Engineer**	**Engineer**	**Biologist**	**Economist**	**Admin Asst**
Summary & comparison of alternatives	12	12	12	12	12	4
Evaluate environmental resources	30			30		2
Geology		20	20			4
Foundation & slope stability		40	40			8
Sedimentation						
Hydrology & Hydraulics		110	110			20
Run hydrologic models		150	150			20
Breach inundation study		120	120			20
Develop floodplain maps						
Economics						
Determine economic benefits for each alternative					80	10
Trend analysis for alternatives					10	2
Claculate average annual damages					20	2
Calculate benefit cost ratio					6	
Detremine National Economic Efficiency plan					6	
Final summary & comparison of alternative table					180	20
Final environmental consequences narrative	100			100		20
Total	**142**	**452**	**452**	**142**	**314**	**132**

Phase 7 -Make Decisions						
Compare & review alternatives with sponsor	30	10	10	10	10	2
Evaluate environmental resources	440	110	110	110	110	40
Total	**470**	**120**	**120**	**120**	**120**	**42**

Phase 8 -Review & Draft Environmental Document						
Response to agencies and other interseted parties' comments	24	20	20	20	20	4
Repsonse NWMC and SLO review	100	40	40	40	40	10
Repsonse to HQ National Programmatic review	20	10	10	10	10	2
Complete plan	30	30	30	30	30	4
Total	**174**	**100**	**100**	**100**	**100**	**20**

Appendix E.

Supporting Information Appendix (T&E and Invasive Species)

Endangered species

Listed species and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

Additional information on endangered species data is provided below.

The following species are potentially affected by activities in this location:

THUMBNAILS | LIST

Mammals

NAME	STATUS
Indiana Bat (CH) *Myotis sodalis* Wherever found	Endangered
Northern Long-eared Bat *Myotis septentrionalis* Wherever found	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* Wherever found	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

RELATED LINKS

Birds of Conservation Concern

Measures for avoiding and minimizing impacts to birds

Nationwide conservation measures for birds

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

THUMBNAILS | LIST

PROBABILITY OF PRESENCE SUMMARY

NAME / LEVEL OF CONCERN	BREEDING SEASON
Bald Eagle Haliaeetus leucocephalus Non-BCC Vulnerable	Breeds Sep 1 to Aug 31
Black-billed Cuckoo Coccyzus erythropthalmus BCC Rangewide (CON)	Breeds May 15 to Oct 10
Black-capped Chickadee Poecile atricapillus practicus BCC - BCR	Breeds Apr 10 to Jul 31
Bobolink Dolichonyx oryzivorus BCC Rangewide (CON)	Breeds May 20 to Jul 31
Canada Warbler Cardellina canadensis BCC Rangewide (CON)	Breeds May 20 to Aug 10
Cerulean Warbler Dendroica cerulea BCC Rangewide (CON)	Breeds Apr 27 to Jul 20

Chimney Swift Chaetura pelagica BCC Rangewide (CON)	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will Antrostomus vociferus BCC Rangewide (CON)	Breeds May 1 to Aug 20
Golden Eagle Aquila chrysaetos Non-BCC Vulnerable	Breeds elsewhere
Golden-winged Warbler Vermivora chrysoptera BCC Rangewide (CON)	Breeds May 1 to Jul 20
Kentucky Warbler Oporornis formosus BCC Rangewide (CON)	Breeds Apr 20 to Aug 20
Prairie Warbler Dendroica discolor BCC Rangewide (CON)	Breeds May 1 to Jul 31
Prothonotary Warbler Protonotaria citrea BCC Rangewide (CON)	Breeds Apr 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus BCC Rangewide (CON)	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus BCC - BCR	Breeds elsewhere
Wood Thrush Hylocichla mustelina BCC Rangewide (CON)	Breeds May 10 to Aug 31

Listing status

The Endangered Species Act (ESA) and the guidance and policies of the U.S. Fish and Wildlife Service (Service) define many categories of listing statuses for species. As a general rule, IPaC uses the term "listed species" to generically refer to species that may belong to any of the categories.

Endangered (E)

Any species which is in danger of extinction throughout all or a significant portion of its range. Endangered species are protected by the take prohibitions of section 9 under the ESA.

Threatened (T)

Any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Threatened species are protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA.

Candidate (C)

Any species for which the Service has sufficient information on its biological status and threats to propose it as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities. Candidate species are not protected by the take prohibitions of section 9 of the ESA.

Proposed endangered (PE)

Any species the Service has determined is in danger of extinction throughout all or a significant portion of its range and the Service has proposed a draft rule to list as endangered. Proposed endangered species are not protected by the take prohibitions of section 9 of the ESA until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

Proposed threatened (PT)

Any species the Service has determined is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and the Service has proposed a draft rule to list as threatened. Proposed threatened species are not protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA, until the rule to list is finalized. Under section 7(a)(4) of the ESA, federal agencies must confer with the Service if their action will jeopardize the continued existence of a proposed species.

Similarity of Appearance, Endangered (SAE)

Any species listed as endangered due to similarity of appearance with another species that is listed as endangered. Species listed under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from an endangered species and where the additional threat posed to the endangered species by the similarity of appearance. Species listed under a similarity of appearance may be protected by the take prohibitions of section 9 under the ESA, where they overlap with the listed entity they were listed to protect.

Similarity of Appearance, Threatened (SAT)

Any species listed as threatened due to similarity of appearance with another species that is listed as threatened. Species listed under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from a threatened species and where the additional threat posed to the threatened species by the similarity of appearance. Species listed under a similarity of appearance may be protected by the take prohibitions of section 9 under the ESA, where they overlap with the listed entity they were listed to protect.

Proposed Similarity of Appearance, Endangered (PSAE)

Any species proposed for listing as endangered due to similarity of appearance with another species that is listed as endangered, but a final rule to list has not yet been published. Species proposed for listing under a similarity of appearance are not biologically endangered and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from an endangered species and where the additional threat posed to the endangered species by the similarity of appearance. Proposed similarity of appearance are not protected by the take prohibitions of section 9 of the ESA until the rule is finalized.

Proposed Similarity of Appearance, Threatened (PSAT)

Any species proposed for listing as threatened due to similarity of appearance with another species that is listed as threatened, but a final rule to list has not yet been published. Species proposed for listing under a similarity of appearance are not biologically threatened and are not subject to section 7 consultation. Listing by similarity of appearance depends on the degree of difficulty law enforcement personnel would have in distinguishing the species from a threatened species and where the additional threat posed to the threatened species by the similarity of appearance. Proposed threatened species are not protected by the take prohibitions of section 9 of the ESA until the rule is finalized.

Emergency listing, Endangered (EmE)

Any species for which the Secretary of the Department of the Interior (Secretary) has determined it is at significant immediate risk of survival and publishes an emergency listing as endangered. The emergency listing is temporary (240 days). During this time the Service evaluates the species under standard listing protocols. Emergency-listed endangered species are afforded all the protections afforded by the ESA.

Emergency listing, Threatened (EmT)

Any species for which the Secretary has determined it is at significant immediate risk of survival and publishes an emergency listing as threatened. The emergency listing is temporary (240 days). During this time the Service evaluates the species under standard listing protocols. Emergency-listed threatened species are protected by the take prohibitions of section 9, consistent with any protective regulations finalized under section 4(d) of the ESA.

Experimental population, Essential (EXPE)

A population that has been established within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined an essential population is necessary for the continued existence of the species. Essential experimental populations are treated as threatened species and afforded all the protections afforded to threatened species by the ESA.

Experimental population, Non-essential (EXPN)

A population that has been established within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined a non-essential population is not necessary for the continued existence of the species. For the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))).

Proposed experimental population, Essential (PEXPE)

A population that has been proposed for establishment within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has proposed an essential population is necessary for the continued existence of the species. Proposed essential experimental populations will be treated as threatened species and afforded all the protections afforded to threatened species by the ESA when finalized. Prior to a final designation under section 10(j) of the ESA, proposed experimental populations do not require consultation under section 7(a)(2) of the ESA and are not protected by the take prohibitions of section 9. Federal agencies must confer with the Service for any actions that may jeopardize the continued existence of proposed species.

Proposed experimental population, Non-essential (PEXPN)

A population that has been proposed for establishment within its historical range under section 10(j) of the ESA to aid recovery of the species. The Service has determined a non-essential population is not necessary for the continued existence of the species. Once finalized, for the purposes of consultation, non-essential experimental populations are treated as threatened species on National Wildlife Refuge and National Park land (require consultation under 7(a)(2) of the ESA) and as a proposed species on private land (no section 7(a)(2) requirements, but Federal agencies must not jeopardize their existence (section 7(a)(4))). Federal agencies must confer with the Service for any actions that may jeopardize the continued existence of proposed species.

Birds of Conservation Concern (BBC)

Bird Conservation Region (BBR)

Continental United States and Alaska (CON)

USFWS Information for Planning and Consultation tool (IPac)

(https://ipac.ecosphere.fws.gov/location and upload shapefile of watershed)

(https://ipac.ecosphere.fws.gov/status/list)

Federally Threatened and Endangered Species in West Virginia

Federally Endangered Species		Critical Habitat	Year Listed
Indiana bat	*Myotis sodalis*	Y	1967
gray bat (accidental)	*Myotis grisescens*		1976
Pink mucket pearlymussel	*Lampsilis abrupta*		1976
Virginia big-eared bat	*Corynorhinus townsendii virginianus*	Y	1979
running buffalo clover *	*Trifolium stoloniferum*		1987
harperella	*Ptilimnium nodosum*		1988
shale barren rockcress	*Arabis serotina*		1989
fanshell	*Cyprogenia stegaria*		1990
purple cat's paw pearlymussel	*Epioblasma obliquata obliquata*		1990
northeastern bulrush *	*Scirpus ancistrochaetus*		1991
northern riffleshell	*Epioblasma torulosa rangiana*		1993
clubshell	*Pleurobema clava*		1993
James spinymussel	*Pleurobema collina*		1998
snuffbox	*Epioblasma triquetra*		2012
rayed bean	*Villosa fabalis*		2012
spectaclecase	*Cumberlandia monodonta*		2012
sheepnose	*Plethobasus cyphyus*		2012
Diamond Darter	*Crystallaria cincotta*	Y	2013
Guyandotte River crayfish	*Cambarus veteranus*	proposed	2016
rusty patched bumble bee	*Bombus affinis*		2017
Candy Darter	*Etheostoma osburni*	proposed	2018
tubercled-blossom pearly mussel	*Epioblasma torulosa torulosa*	extirpated	

Federally Threatened Species		Critical Habitat	4(d) rule	Year Listed
flat-spired three-toothed land snail	*Triodopsis platysayoides*			1978
Madison Cave isopod	*Antrolana lira*	Y		1982
small whorled pogonia	*Isotria medeoloides*			1982
Cheat Mountain salamander	*Plethodon nettingi*			1989
Virginia spiraea	*Spiraea virginiana*			1990
northern long-eared bat	*Myotis septentrionalis*		Y	2015
Big Sandy crayfish	*Cambarus callainus*	proposed		2016
eastern black rail (accidental)	*Laterallus jamaicensis jamaicensis*		Y	2020

Species Propopsed for Listing		Critical Habitat	Status	Year Listed
round hickorynut	*Obovaria subrotunda*	Y	Thr.	2020
longsolid	*Fusconaia subrotunda*	Y	Thr.	2020

* Proposed for delisting

Revised: 30 September 2020

Invasive species examples:

- **Garlic mustard, Japanese honeysuckle** and **kudzu**- invaders of moist forest edges, even those without disturbance.
- **Purple loosestrife**- an incredibly invasive exotic now blanketing emergent wetlands along the Ohio River, and increasing along other major rivers throughout the state. In some cases it replaces native vegetation, threatens rare plant species, and destroys small wetlands.

Garlic mustard

- **Mile-a-minute**- a spiny vine found climbing 10-20 feet into trees, often smothering native shrubs and shading out herbaceous plants along the Ohio River and rivers in the Eastern Panhandle.

Spotted knapweed

- **Japanese knotweed and sachaline knotweed**- two stout, perennial clonal herbs that can out-compete all other vegetation in certain areas.
- **Spotted knapweed, barren brome and tree of heaven**- invaders of shale barrens, limestone glades and barrens, and native grassland communities.

What can you do?

- Become aware of the differences between native and non-native plants and the potential for invasive species to damage native ecosystems. The following items are available from the WVDNR:
  - ❖*Checklist of the Vascular Flora of West Virginia,* a checklist of the native and naturalized vascular plants of the state.
  - ❖*Native Shrubs in Wildlife Landscaping,* a series of information sheets about the use of 50 native shrubs in wildlife planting, produced by the West Virginia Native Plant Society and the West Virginia Wildlife Diversity program.
  - ❖A list of companies within the mid-Atlantic region from which alternative native stock can be purchased.
- Evaluate in advance the wisdom of introducing non-native plants into our state.
- Minimize habitat disturbance in natural areas, reducing the chance for invasion by non-native aggressive plants.
- In extreme cases, consider the eradication of highly problematic non-native invasive plant species, but carefully consider the potential consequences on the entire ecosystem and the likelihood of success. In less severe cases, try to minimize the impact of the invasive plant on the natural area.
- Help educate individuals of the seriousness of the problem and explore the use of native plant species in the management of public lands.
- If you find an unfamiliar plant and it appears to be spreading, have it identified by your local extension agent. If it is a potential invader, members of the WV Invasive Species Working Group will conduct an assessment and make recommendations.

Who is helping?

- The ***West Virginia Invasive Species Working Group***, an inclusive statewide group whose mission is to facilitate communication and collaboration for the prevention or reduction of the negative impacts of invasive species.
- The ***West Virginia Native Plant Society*** encourages nurserymen to cultivate plants native to West Virginia that could be used in conservation and ornamental projects throughout the state as alternatives to non-native invasive plant species.
- The ***West Virginia Garden Club, Inc.***, the West Virginia Native Plant Society and the WV Division of Natural Resources jointly produced this brochure.
- The ***West Virginia Native Plant Society*** and the ***West Virginia Natural Heritage Program*** have developed informative presentations about invasive plants. Please contact the DNR Elkins office *(below)* to arrange a presentation.
- Several organizations sponsor workshops on identifying problematic plant species.

West Virginia Division of Natural Resources
in cooperation with:
West Virginia Garden Clubs, Inc.
West Virginia Native Plant Society

Cover photos: Background image of Japanese knotweed by Jil M. Swearinger, USDI National Park Service, www.forestryimages.org and Purple loosestrife (inset) by Linda Haugen, USDA Forest Service, www.forestryimages.org

Wildlife Diversity Program
Wildlife Resources
West Virginia Division of Natural Resources
P.O. Box 67
Elkins, WV 26241
(304) 637-0245
Fax: (304) 637-0250

10M 4/06

WVDNR WILDLIFE RESOURCES SECTION

Invasive Plants of West Virginia

www.wvdnr.gov

Kudzu

What are non-native invasive plants?

People have been moving Earth's plants from place to place for centuries. Many of the exotic plants we have introduced to our landscape by intention or accident have been beneficial to us and have had no unfortunate ecological impacts on natural communities. But a small percentage have spread from where they first became established, and have become serious threats to wetlands, shale barrens, prairies, glades and other rare ecosystems.

Invasive plants often get started in areas disturbed by such human activities as road and trail building, timbering, mining, and other activities that remove native vegetation, disturb the soil, or dramatically change the amount of sunlight or moisture that reaches the land. From such situations, a relatively small number of invasive species have moved into natural areas. These species have reproduced rapidly, forming stands that exclude nearly all other plant species. In the worst cases, they radically altered ecosystem processes and natural areas, and displaced native species.

Concerned citizens have long been sounding alarms about the effects of pollution and misuse of land on our native plant and animal communities. Recently, increasing concern has been expressed that non-native plant species are invading and changing natural areas. These aggressive "weeds" are non-native invasive plants, sometimes referred to as exotic pest plants.

We value Natural Areas!

Natural areas are generally areas of limited development where naturally occurring, functioning ecosystems are supporting the greatest amount of natural biological diversity the nonliving resources (soil, sunlight, minerals, etc.) of that area can support.

- Healthy natural areas have seemingly endless interrelationships among the living and non-living parts of their ecosystems. Life thrives in such areas!
- Natural areas often support rare, threatened and endangered species of plants, animals, and fungi. The natural communities themselves are often rare enough or of such quality that society recognizes the value of conserving them.

Loosestrife infestation.

- Natural areas are valuable parts of the global landscape from which future generations can continue to learn about ecological processes. Areas such as Cranberry Glades, Cranesville Swamp, shale barrens, limestone glades and riverine marshes are a few West Virginia examples.

Non-native invasive plant species, in numerous examples around the world, have reduced available habitat for native species and/or eliminated associated native species altogether. This process has the potential to significantly reduce natural biological diversity.

How do they differ from native species?

Generally, the native plant species of West Virginia are those that were part of plant communities when North America was first settled by Europeans. Change in plant communities is a natural part of life. As Dr. John Randall (The Nature Conservancy) and Janet Marinelli (Brooklyn Botanic Garden), point out in their handbook. *Invasive Plants: Weeds of the Global Garden*:

Stilt grass overtaking an interior mud-flat wetland at Ohio River Island.

"New species move in as the climate changes and as soils build up and become richer, or erode and become less fertile.

In the normal course of events, the arrival of new species may be the result of a single catastrophic event like a hurricane, or of gradual change over thousands of years. Humans have vastly accelerated the movement of plants, carrying thousands of species that could not have crossed natural barriers like oceans, mountain ranges and deserts, to new areas.

Mile-a-minute

Species that have flourished and spread on their own, only after people transported them across barriers they could not otherwise surmount, are considered non-natives. In many areas these plants have overwhelmed the native plants and animals."

What challenges are there in controlling invasive plants?

The number of non-native invasive plant species in West Virginia is rising

Approximately 600 species, nearly 25% of vascular plants found in West Virginia outside of cultivation, are non-native. Each year, ecologists become more aware of the number of invasive plant species within the state and the threats they pose to natural communities.

Native stock plants are available

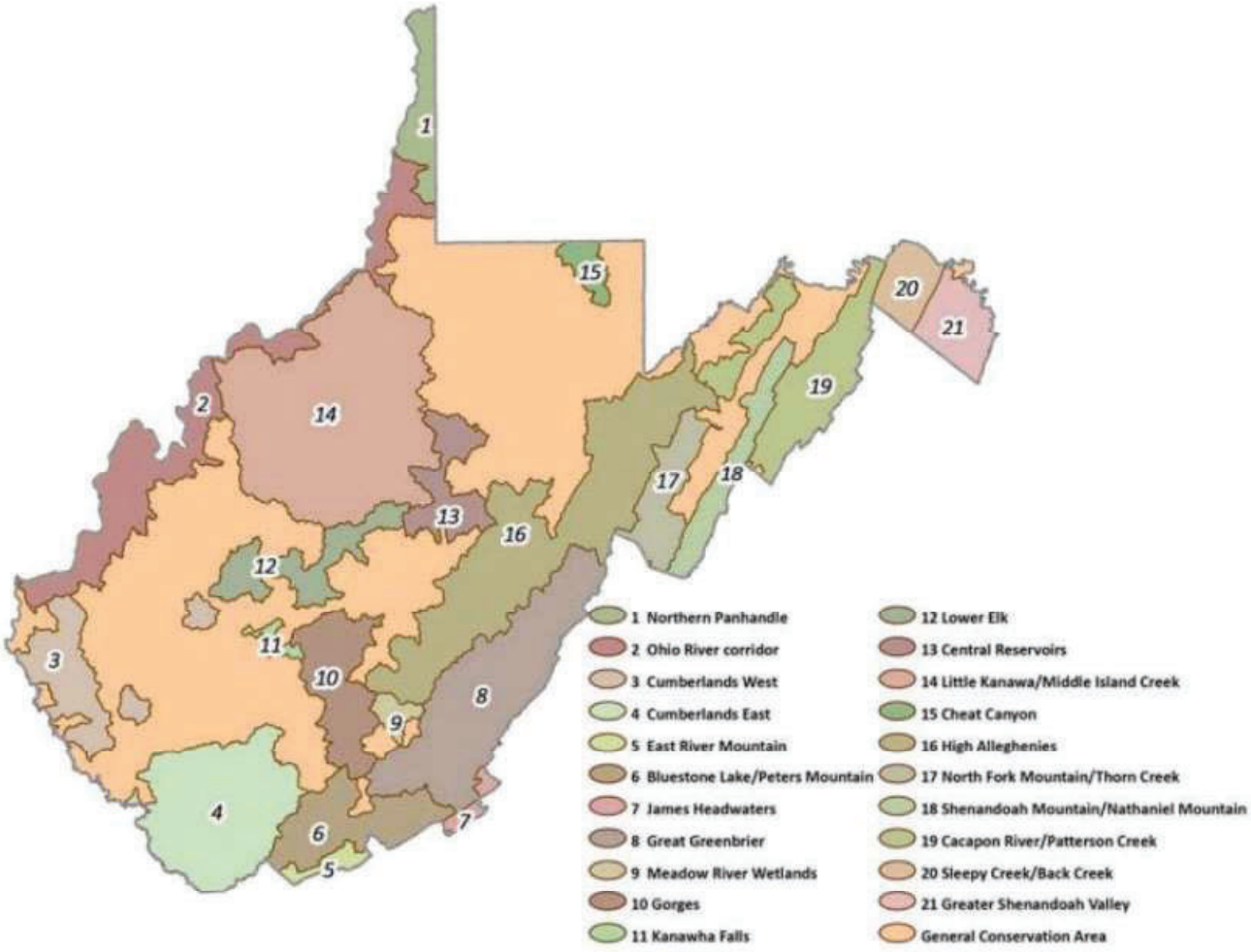
Many agencies and private landowners are using native alternatives for conservation purposes, and many West Virginia nurseries sell varieties derived from local communities to be sold as alternatives to exotic species.

Joe-Pye weed, a valuable native

[InvasivePlants.indd (wvdnr.gov)]

[listed species cheat sheet.xlsx (wvdnr.gov)]

WVDNR Conservation Focus Areas



[WV DNR Conservation Focus Areas]

Species of Greatest Conservation Need Found In Three Fork Creek Watershed

Common Name	Scientific Name	Name Category	G Rank	S Rank
A Tiger Beetle	Cicindela unipunctata	Invertebrate Animal	G4G5	S3
Allegheny Cliff Fern	Woodsia appalachiana	Vascular Plant	G4	S2
Allegheny Mountain Dusky Salamander	*Desmognathus ochrophaeus*	Vertebrate Animal	G5	S4
Allegheny Plum	Prunus alleghaniensis var. alleghaniensis	Vascular Plant	G4T4	S3
Allegheny River Cruiser	Macromia alleghaniensis	Invertebrate Animal	G4	S2S3
Allegheny Woodrat	*Neotoma magister*	Vertebrate Animal	G5	S3B
Appalachian Blue Violet	*Viola appalachiensis*	Vascular Plant	G4	S4
Appalachian Cottontail	Sylvilagus obscurus	Vertebrate Animal	G4	S2
Appalachian Tiger Beetle	*Cicindela ancocisconensis*	Invertebrate Animal	G3	S3
Arrowfeather Three-awn	Aristida purpurascens var. purpurascens	Vascular Plant	G5T5	S1
Awned Flatsedge	Cyperus squarrosus	Vascular Plant	G5	S3
Baffled Threetooth	Triodopsis fraudulenta	Invertebrate Animal	G4	S3
Bald Eagle	Haliaeetus leucocephalus	Vertebrate Animal	G5	S3BS3N
Balsam Globe	Mesodon aff. Andrewsae	Invertebrate Animal	GNR	S1
Barrens Tiger Beetle	*Cicindela patruela*	Invertebrate Animal	G3	S2S3
Beaked Dodder	Cuscuta rostrata	Vascular Plant	G4	S2
Bearded Skeleton Grass	Gymnopogon ambiguus	Vascular Plant	G4	S1
Bewick's Wren	Thryomanes bewickii altus	Vertebrate Animal	T2	SX
Big-top Lovegrass	Eragrostis hirsuta	Vascular Plant	G5	SH
Bittercress	Cardamine flagellifera var. flagellifera	Vascular Plant	G3	S2
Black Mountain Salamander	Desmognathus welteri	Vertebrate Animal	G4	S2
Black Striate Snail	Striatura ferrea	Invertebrate Animal	G5	S3
Black-bellied Salamander	Desmognathus quadramaculatus	Vertebrate Animal	G5	S3
Blackburnian Warbler	Setophaga fusca	Vertebrate Animal	G5	S3
Blackgirdle Bulrush	Scirpus atrocinctus	Vascular Plant	G5	S3
Black-tipped Darner	Aeshna tuberculifera	Invertebrate Animal	G4	S3
Bluebell Bellflower	Campanula rotundifolia	Vascular Plant	G5	S3
Bristly Black Currant	Ribes lacustre	Vascular Plant	G5	S2
Broad-headed Skink	Plestiodon laticeps	Vertebrate Animal	G5	S2
Broad-leaved Ironweed	Vernonia glauca	Vascular Plant	G5	S1
Broad-winged Hawk	*Buteo platypterus*	Vertebrate Animal	G5	S3B
Bronze Copper	Lycaena hyllus	Invertebrate Animal	G5	S2
Brush Creek Threetooth	Triodopsis juxtidens robinae	Invertebrate Animal	GNR	S5T1
Butternut	Juglans cinerea	Vascular Plant	G4	S3
Canada Mountain Ricegrass	Piptatherum canadense	Vascular Plant	G5	S1
Canada Yew	Taxus canadensis	Vascular Plant	G5	S2S3
Canadian Bunchberry	Cornus canadensis	Vascular Plant	G5	S2
Candy Darter	Etheostoma osburni	Vertebrate Animal	G3	S1
Cattail Sedge	Carex typhina	Vascular Plant	G5	S2
Cheat Mountain Salamander	Plethodon nettingi	Vertebrate Animal	G2G3	S2
Cherrystone Drop	Hendersonia occulta	Invertebrate Animal	G4	S3
Chestnut Lipfern	Cheilanthes eatonii	Vascular Plant	G5	S2
Cobra Clubtail	Gomphus vastus	Invertebrate Animal	G5	S2
Cobweb Skipper	Hesperia metea	Invertebrate Animal	G4G5	S2S3
Columbine Duskywing	Erynnis lucilius	Invertebrate Animal	G4	S2
Cow Knob (white Spotted) Salamander	Plethodon punctatus	Vertebrate Animal	G3	S2
Creeping Snowberry	Gaultheria hispidula	Vascular Plant	G5	S3
Cumberland Plateau Salamander	Plethodon kentucki	Vertebrate Animal	G4	S3
Cup-plant	Silphium perfoliatum var. connatum	Vascular Plant	G5T3	S1

Common Name	Scientific Name	Name Category	G Rank	S Rank
Cursed Crowfoot	Ranunculus sceleratus var. sceleratus	Vascular Plant	G5T5	S2
Curtiss' Milkwort	Polygala curtissii	Vascular Plant	G5	S2
Daisy-leaved Grape-fern	Botrychium matricariifolium	Vascular Plant	G5	S2
Diana Fritillary	Speyeria diana	Invertebrate Animal	G3G4	S2S3
Dodder	Cuscuta indecora var. neuropetala	Vascular Plant	G5T5	S1
Downy Arrow-wood	Viburnum rafinesquianum	Vascular Plant	G5	S2
Downy Milkpea	Galactia volubilis	Vascular Plant	G5	S2
Dusky Darter	Percina sciera	Vertebrate Animal	G5	S3
Early Hairstreak	Erora laeta	Invertebrate Animal	GU	S2
Eastern Box Turtle	Terrapene carolina carolina	Vertebrate Animal	G5T5	S5
Eastern Hellbender	Cryptobranchus alleganiensis	Vertebrate Animal	G3G4	S2
Eastern Hog-nosed Snake	Heterodon platirhinos	Vertebrate Animal	G5	S2
Eastern River Cooter	Pseudemys concinna concinna	Vertebrate Animal	T5	S2
Eastern Small-footed Bat	Myotis leibii	Vertebrate Animal	G3	S1
Eastern Speargrass	Piptochaetium avenaceum	Vascular Plant	G5	S2
Elktoe	Alasmidonta marginata	Invertebrate Animal	G4	S1
Emory's Sedge	Carex emoryi	Vascular Plant	G5	S2
False Blue Indigo	Baptisia australis var. australis	Vascular Plant	G5T3T4	S3
False Melicgrass	Schizachne purpurascens	Vascular Plant	G5	S1
Flag-tailed Spinyleg	Dromogomphus spoliatus	Invertebrate Animal	G4G5	S1
Flat-spiked Sedge	Carex planispicata	Vascular Plant	G4Q	S2
Flat-stem Spikerush	Eleocharis compressa	Vascular Plant	G4	S2
Forked Rush	Juncus dichotomus	Vascular Plant	G5	S1
Fowler's Toad	Bufo woodhousii fowleri	Vertebrate Animal	G5	S5
Fraser's Sedge	Cymophyllus fraserianus	Vascular Plant	G4	S3
Fraudulent Slitmouth	Stenotrema macgregori	Invertebrate Animal	GNR	S2
Gemmed Satyr	Cyllopsis gemma	Invertebrate Animal	G4G5	S3
Giant Cane	Arundinaria gigantea ssp. gigantea	Vascular Plant	G5T5	S2
Glossy Dome	Ventridens acerra	Invertebrate Animal	G4	S2
Godfrey's Thoroughwort	Eupatorium godfreyanum	Vascular Plant	G4	S2S3
Golden Dome	Ventridens arcellus	Invertebrate Animal	G4	S3
Golden Mouse	Ochrotomys nuttalli	Vertebrate Animal	G5	S2
Gray Comma	Polygonia progne	Invertebrate Animal	G4G5	S3
Greater Straw Sedge	Carex normalis	Vascular Plant	G5	S3
Green Floater	Lasmigona subviridis	Invertebrate Animal	G3	S2
Green Salamander	Aneides aeneus	Vertebrate Animal	G3G4	S3
Grizzled Skipper	Pyrgus (centaureae) wyandot	Invertebrate Animal	G1G2Q	S1
Hair-awn Muhly	Muhlenbergia capillaris var. capillaris	Vascular Plant	G5T5	S1
Hairy Rockcress	Arabis hirsuta ssp. pycnocarpa	Vascular Plant	G5T5	S2
Harris's Checkerspot	Chlosyne harrisii	Invertebrate Animal	G4	S2
Heartleaf Peppervine	Ampelopsis cordata	Vascular Plant	G5	S1
Hill Holly	Ilex collina	Vascular Plant	G3	S2
Indiana Bat	Myotis sodalis	Vertebrate Animal	G2	S1
Iroquois Vallonia Snail	Vallonia excentrica	Invertebrate Animal	G5	S3
Jefferson Salamander	Ambystoma jeffersonianum	Vertebrate Animal	G4	S2
Kate's Mountain Clover	Trifolium virginicum	Vascular Plant	G3	S3
Kidneyleaf Grass-of-parnassus	Parnassia asarifolia	Vascular Plant	G4	S2
Lesser Purple Fringed Orchid	Platanthera psycodes	Vascular Plant	G5	S1
Longtail Salamander	Eurycea longicauda	Vertebrate Animal	G5	S5
Long-tailed Shrew	Sorex dispar	Vertebrate Animal	G4	S2S3
Loomis' Mountain-mint	Pycnanthemum loomisii	Vascular Plant	G4	S2
Low Spearwort	Ranunculus pusillus var. pusillus	Vascular Plant	G5T4	S1
Lowland Pillsnail	Euchemotrema leai	Invertebrate Animal	G5	S3
Maryland Meadowbeauty	Rhexia mariana var. mariana	Vascular Plant	G5T5	S1
Matting Witchgrass	Dichanthelium meridionale	Vascular Plant	G5	S3

Common Name	Scientific Name	Name Category	G Rank	S Rank
Meadow Sundrops	Oenothera pilosella ssp. pilosella	Vascular Plant	G5T5	S2
Midland Mud Salamander	Pseudotriton montanus diastictus	Vertebrate Animal	G5T5	S1
Midland Sedge	Carex mesochorea	Vascular Plant	G4G5	S2
Monongahela Barbara's-buttons	Marshallia pulchera	Vascular Plant	G2	S2
Mottled Duskywing	Erynnis martialis	Invertebrate Animal	G3	S3
Mountain Chorus Frog	Pseudacris brachyphona	Vertebrate Animal	GNR	S4
Mountain Fetterbush	Pieris floribunda	Vascular Plant	G4	S3
Mountain Meadowrue	Thalictrum clavatum	Vascular Plant	G4	S2
Mountain-pimpernel	Taenidia montana	Vascular Plant	G3	S3
Mucket	Actinonaias ligamentina	Invertebrate Animal	G5	S3
New River Shiner	Notropis scabriceps	Vertebrate Animal	G4	S2
Nodding Wild Onion	Allium oxyphilum	Vascular Plant	G2Q	S2
Northern Bog Clubmoss	Lycopodiella inundata	Vascular Plant	G5	S2
Northern Coal Skink	Plestiodon anthracinus anthracinus	Vertebrate Animal	G5T5	S2
Northern Copperhead	Agkistrodon contortrix mokasen	Vertebrate Animal	G5T5	S5
Northern Cricket Frog	Acris crepitans	Vertebrate Animal	G5	S2
Northern Dusky Salamander	Desmognathus fuscus	Vertebrate Animal	G5	S5
Northern Hairstreak	Satyrium favonius ontario	Invertebrate Animal	G4T4	S1S2
(northern) Red Salamander	Pseudotriton ruber ruber	Vertebrate Animal	G5	S3
Northern Ring-necked Snake	Diadophis punctatus edwardsii	Vertebrate Animal	T5	S5
Northern Slimy Salamander	Plethodon glutinosus	Vertebrate Animal	G5	S5
Northern Stitchwort	Stellaria borealis ssp. borealis	Vascular Plant	G5T5	S1
Northern Two-lined Salamander	Eurycea bislineata	Vertebrate Animal	G5	S5
Oblong-fruit Serviceberry	Amelanchier bartramiana	Vascular Plant	G5	S2
Old-pasture Bluegrass	Poa saltuensis	Vascular Plant	G5	S1
Osprey	Pandion haliaetus	Vertebrate Animal	G5	S2
Pink-edged Sulphur	Colias interior (high elev)	Invertebrate Animal	G5T2Q	S1
Pistolgrip	Tritogonia verrucosa	Invertebrate Animal	G4G5	S3
Plain Pocketbook	Lampsilis cardium	Invertebrate Animal	G5	S3
Popeye Shiner	Notropis ariommus	Vertebrate Animal	G3	S2
Prairie Flax	Linum lewisii var. lewisii	Vascular Plant	G4G5T4T5	S2
Pretty Sedge	Carex woodii	Vascular Plant	G4	S3
Price's Cave Isopod	Caecidotea pricei	Invertebrate Animal	G5	S1
Purple Wartyback	Cyclonaias tuberculata	Invertebrate Animal	G5	S1
Racemose Goldenrod	Solidago simplex ssp. randii var. racemosa	Vascular Plant	G3	S2
Rapids Clubtail	Gomphus quadricolor	Vascular Plant	G3G4	S3
Reflexed Flatsedge	Cyperus refractus	Vascular Plant	G5	S3
Ribbed Striate Snail	Striatura exigua	Invertebrate Animal	G5	S2
Ridge-and-valley Slitmouth	Stenotrema edvardsi	Invertebrate Animal	G4G5	S3
River Seedbox	Ludwigia leptocarpa	Vascular Plant	G5	S2
Robin-run-away	Dalibarda repens	Vascular Plant	G5	S3
Rough Boneset	Eupatorium pilosum	Vascular Plant	G5	S2
Roughleaf Ricegrass	Oryzopsis asperifolia	Vascular Plant	G5	S1
Roundleaf Dogwood	Cornus rugosa	Vascular Plant	G5	S1
Roundleaf Sundew	Drosera rotundifolia var. rotundifolia	Vascular Plant	G5T5	S3
Roundleaf Thimbleweed	Anemone canadensis	Vascular Plant	G5	S1
Running Buffalo Clover	Trifolium stoloniferum	Vascular Plant	G3	S3
Salt & Pepper Looper Moth	Syngrapha rectangula	Invertebrate Animal	G5	S1
Sand Grape	Vitis rupestris	Vascular Plant	G3	S2
Sculptured Dome	Ventridens collisella	Invertebrate Animal	G4G5	S3
Seal Salamander	Desmognathus monticola	Vertebrate Animal	G5	S5
Sealed Globelet	Mesodon mitchellianus	Invertebrate Animal	G4	S3
Shale Bindweed	Calystegia spithamaea ssp. purshiana	Vascular Plant	G4G5T4	S3
Shalebarren Evening-primrose	Oenothera argillicola	Vascular Plant	G3G4	S3

Common Name	Scientific Name	Name Category	G Rank	S Rank
Shalebarren Goldenrod	Solidago arguta var. harrisii	Vascular Plant	G5T4	S3
Shalebarren Ragwort	Packera antennariifolia	Vascular Plant	G4	S3
Shalebarren Rockcress	Arabis serotina	Vascular Plant	G2	S2
Shalebarren Wild Buckwheat	Eriogonum allenii	Vascular Plant	G4	S2
Sharpleaf St. John's-wort	Hypericum virgatum	Vascular Plant	G4	S1
Shumard Oak	Quercus shumardii	Vascular Plant	G5	S2
Silver-bordered Fritillary	Boloria selene myrina	Invertebrate Animal	G5T5	S3
Silver-haired Bat	Lasionycteris noctivagans	Vertebrate Animal	G5	S2
Silvery Nailwort	Paronychia argyrocoma	Vascular Plant	G4	S3
Silvery Sedge	Carex canescens	Vascular Plant	G5	S3
Slender Crabgrass	Digitaria filiformis	Vascular Plant	G5	S1
Slender Dayflower	Commelina erecta	Vascular Plant	G5T5	S2
Slender Waternymph	Najas gracillima	Invertebrate Animal	G5	S2
Slender Yellow-eyed-grass	Xyris torta	Vascular Plant	G5	S2
Small Cranberry	Vaccinium oxycoccos	Vascular Plant	G5	S3
Smooth Blue American-aster	Symphyotrichum laeve var. concinnum	Vascular Plant	G5T4	S2
Smooth Button	Mesomphix perlaevis	Invertebrate Animal	G4G5	S3
Smooth Cliffbrake	Pellaea glabella ssp. glabella	Vascular Plant	G5T5	S2
Smooth Hedge-nettle	Stachys tenuifolia	Vascular Plant	G5	S3
Smooth Sunflower	Helianthus laevigatus	Vascular Plant	G4	S2
Snowy Catchfly	Silene nivea	Vascular Plant	G4	S1
Snowy Trillium	Trillium nivale	Vascular Plant	G4	S2
Southeastern Tigersnail	Anguispira strongylodes	Invertebrate Animal	G5	S2
Southern Bog Lemming	Synaptomys cooperi	Vertebrate Animal	G5	S3
Southern Loosestrife	Lysimachia tonsa	Vascular Plant	G4	SH
Southern Pygmy Shrew	Sorex hoyi winnemana	Vertebrate Animal	G5T4	S2S3
Southern Rock Vole	Microtus chrotorrhinus carolinensis	Vertebrate Animal	G4T3	S2
Southern Water Shrew	Sorex palustris punctulatus	Vertebrate Animal	G5T3	S1
Spike	Elliptio dilatata	Invertebrate Animal	G5	S3
Spiked Crested Coralroot	Hexalectris spicata var. spicata	Vascular Plant	G5T4T5	S1
Spikerush	Eleocharis intermedia	Vascular Plant	G5	S1
Spreading Sedge	Carex laxiculmis var. copulata	Vascular Plant	G5T3T5	S2
Spring Salamander	Gyrinophilus porphyriticus porphyriticus	Vertebrate Animal	G5	S5
Spruce Knob Threetooth	Triodopsis picea	Invertebrate Animal	G3	S3
Star Tickseed	Coreopsis pubescens	Vascular Plant	G5	S2
Stygian Shadowdragon	Neurocordulia yamaskanensis	Invertebrate Animal	G5	S3
Summer Sedge	Carex aestivalis	Vascular Plant	G4	S3
Swamp Azalea	Rhododendron viscosum	Vascular Plant	G5	S1
Temperate Coil	Helicodiscus shimeki	Invertebrate Animal	G5	S3
Thin-lip Vallonia Snail	Vallonia perspectiva	Invertebrate Animal	G4	S3
Thread Rush	Juncus filiformis	Vascular Plant	G5	S2
Threebirds	Triphora trianthophora	Vascular Plant	G3G4	S2
Three-flower Melicgrass	Melica nitens	Vascular Plant	G5	S1
Threeleaf Goldthread	Coptis trifolia	Vascular Plant	G5	S2
Timber Rattlesnake	Crotalus horridus	Vertebrate Animal	G4	S3
Torrey's Mountain-mint	Pycnanthemum torrei	Vascular Plant	G2	S1
Troublesome Sedge	Carex molesta	Vascular Plant	G4	S3
Two-flower Melicgrass	Melica mutica	Vascular Plant	G5	S2
Variable Sedge	Carex polymorpha	Vascular Plant	G3	S1
Velvet Wedge Snail	Xolotrema denotatum	Invertebrate Animal	G5	S3
Vente-conmigo	Croton glandulosus var. septentrionalis	Vascular Plant	G5T5	S3
Virginia Big-eared Bat	Corynorhinus townsendii virginianus	Vertebrate Animal	G4T2	S2
Virginia Mallow	Sida hermaphrodita	Vascular Plant	G3	S3
Virginia Mantleslug	Philomycus virginicus	Invertebrate Animal	G3	S2

Common Name	Scientific Name	Name Category	G Rank	S Rank
Virginia Spiraea	Spiraea virginiana	Vascular Plant	G2	S1
Water Smartweed	Polygonum amphibium	Vascular Plant	G5	S3
Wehrle's Salamander	Plethodon wehrlei	Vertebrate Animal	G4	S4
Western Sunflower	Helianthus occidentalis ssp. occidentalis	Vascular Plant	G5T5	S2
Whip Nutrush	Scleria triglomerata	Vascular Plant	G5	S2
White Alumroot	Heuchera alba	Vascular Plant	G2Q	S2
White Monkshood	Aconitum reclinatum	Vascular Plant	G3	S3
White-hair Leatherflower	Clematis albicoma	Vascular Plant	G4	S3
White-m Hairstreak	Parrhasius m-album	Invertebrate Animal	G5	S2
White-throated Sparrow	Zonotrichia albicollis	Vertebrate Animal	G5	S1
Wood Thrush	Hylocichla mustelina	Vertebrate Animal	G5	S3B
Woolly Lipfern	Cheilanthes tomentosa	Vascular Plant	G5	S1
WV Northern Flying Squirrel	Glaucomys sabrinus fuscus	Vertebrate Animal	G5T2	S2
Yellow Nailwort	Paronychia virginica	Vascular Plant	G4	S2

Definitions for interpreting NatureServe's global (range-wide) conservation status ranks can be found at the following: Statuses | NatureServe Explorer

Nonindigenous Aquatic Species

Specimen ID	Date Reported	Species	New Area
276654	7/5/2011	mottled fingernailclam *Eupera cubensis*	County: Monongalia (WV) Drainage: Upper Monongahela (05020003)

Invasive Species

Animals:

Common Name	Scientific Name
coyote	*Canis latrans*
mollusc-eating hammerhead worm	*Bipalium vagum*
Norway rat	*Rattus norvegicus*
red-eared slider	*Trachemys scripta elegans*
wandering broadhead planarian	*Bipalium adventitium*

Diseases:

Common Name	Scientific Name
basil downy mildew	*Peronospora belbahrii*
beech bark disease	*Neonectria faginata*
butternut canker	*Ophiognomonia clavigignenti-juglandacearum*
chestnut blight or canker	*Cryphonectria parasitica*
cucurbit downy mildew	*Pseudoperonospora cubensis*
dogwood anthracnose	*Discula destructive*
oak wilt	*Bretziella fagacearum*
Phytophthora root rot	*Phytophthora cinnamomi*
rose rosette disease (RRD)	*Emaravirus RRD*
white pine blister rust	*Cronartium ribicola*

Insects:

Common Name	Scientific Name
bark beetle	*Hylastes opacus*
brown marmorated stink bug	*Halyomorpha halys*
common pine shoot beetle, larger pine shoot beetle	*Tomicus piniperda*
defoliating hemlock moth	*Agonopterix alstroemeriana*
elongate hemlock scale	*Fiorinia externa*
emerald ash borer	*Agrilus planipennis*
fall cankerworm	*Alsophila pometaria*
forest tent caterpillar	*Malacosoma disstria*
green stink bug	*Chinavia hilaris*
hemlock woolly adelgid	*Adelges tsugae*
Japanese beetle	*Popillia japonica*
large aspen tortrix	*Choristoneura conflictana*
multicolored Asian lady beetle	*Harmonia axyridis*

Common Name	Scientific Name
rice stink bug	*Oebalus pugnax*
southern pine beetle	*Dendroctonus frontalis*
spongy moth (formerly gypsy moth)	*Lymantria dispar*
spotted-wing drosophila	*Drosophila suzukii*

Plants:

Common Name	Scientific Name
alfalfa	*Medicago sativa*
alfalfa	*Medicago sativa ssp. sativa*
alpine knapweed, Tyrol knapweed	*Centaurea nigrescens*
alsike clover	*Trifolium hybridum*
American burnweed	*Erechtites hieraciifolius*
Amur honeysuckle	*Lonicera maackii*
annual bluegrass	*Poa annua*
annual honesty	*Lunaria annua*
annual ragweed	*Ambrosia artemisiifolia var. elatior*
annual sowthistle	*Sonchus oleraceus*
annual wormwood	*Artemisia annua*
apple-of-Peru	*Nicandra physalodes*
Asiatic dayflower	*Commelina communis*
asparagus	*Asparagus officinalis*
autumn olive	*Elaeagnus umbellate*
bald brome	*Bromus racemosus*
balsam poplar	*Populus balsamifera*
barnyardgrass	*Echinochloa crus-galli*
beach wormwood	*Artemisia stelleriana*
bermudagrass	*Cynodon dactylon*
big chickweed	*Cerastium fontanum ssp. vulgare*
bigroot morning-glory	*Ipomoea pandurate*
bird vetch	*Vicia cracca*
birdseye pearlwort	*Sagina procumbens*
birdsfoot trefoil	*Lotus corniculatus*
birdsrape mustard	*Brassica rapa*
bittersweet nightshade	*Solanum dulcamara*
bittersweets	*Celastrus spp.*
black knapweed	*Centaurea nigra*
black locust	*Robinia pseudoacacia*
black medic	*Medicago lupulina*
black mustard	*Brassica nigra*
bladder campion	*Silene vulgaris*
border privet	*Ligustrum obtusifolium*
Boston ivy	*Parthenocissus tricuspidate*

Common Name	Scientific Name
bouncingbet	*Saponaria officinalis*
bristlegrass	*Setaria spp.*
bristly foxtail	*Setaria verticillate*
bristly locust	*Robinia hispida*
brittleleaf naiad	*Najas minor*
broadleaf dock	*Rumex obtusifolius*
broadleaf plantain	*Plantago major*
broomrape	*Orobanche spp.*
broomsedge bluestem	*Andropogon virginicus*
brown knapweed	*Centaurea jacea*
buckhorn plantain	*Plantago lanceolata*
buckwheat	*Fagopyrum esculentum*
bulbous bluegrass	*Poa bulbosa*
bulbous buttercup	*Ranunculus bulbosus*
bull thistle	*Cirsium vulgare*
burcucumber	*Sicyos angulatus*
bush honeysuckles (exotic)	*Lonicera spp.*
butterflybush	*Buddleja davidii*
California privet	*Ligustrum ovalifolium*
Callery pear (Bradford pear)	*Pyrus calleryana*
Canada bluegrass	*Poa compressa*
Canada thistle	*Cirsium arvense*
Canadian horseweed	*Erigeron canadensis*
canarygrass	*Phalaris canariensis*
carpet bugle	*Ajuga reptans*
catchweed bedstraw	*Galium aparine*
catnip	*Nepeta cataria*
cheatgrass, downy brome	*Bromus tectorum*
chicory	*Cichorium intybus*
Chinese silvergrass	*Miscanthus sinensis*
Chinese wisteria	*Wisteria sinensis*
Chinese yam	*Dioscorea polystachya*
chocolate vine	*Akebia quinate*
clover dodder	*Cuscuta epithymum*
colonial bentgrass	*Agrostis capillaris*
coltsfoot	*Tussilago farfara*
common barberry	*Berberis vulgaris*
common buckthorn, European buckthorn	*Rhamnus cathartica*
common burdock, lesser burdock	*Arctium minus*
common chickweed	*Stellaria media*
common chickweed	*Stellaria pallida*
common cocklebur	*Xanthium strumarium*

Common Name	Scientific Name
common dandelion	*Taraxacum officinale ssp. officinale*
common duckweed	*Lemna minor*
common grape hyacinth	*Muscari botryoides*
common groundsel	*Senecio vulgaris*
common horse chestnut	*Aesculus hippocastanum*
common mallow	*Malva neglecta*
common mouse-ear chickweed	*Cerastium fontanum*
common mullein	*Verbascum Thapsus*
common pear	*Pyrus communis*
common periwinkle	*Vinca minor*
common pokeweed	*Phytolacca americana*
common purslane	*Portulaca oleracea*
common ragweed	*Ambrosia artemisiifolia*
common reed	*Phragmites australis*
common salsify	*Tragopogon porrifolius*
common selfheal	*Prunella vulgaris*
common speedwell	*Veronica officinalis*
common St. Johnswort	*Hypericum perforatum*
common tansy	*Tanacetum vulgare*
common teasel	*Dipsacus fullonum*
common velvetgrass	*Holcus lanatus*
common vetch	*Vicia sativa*
common viper's bugloss, blueweed	*Echium vulgare*
common yarrow	*Achillea millefolium*
corn chamomile	*Anthemis arvensis*
corn cockle	*Agrostemma githago*
corn gromwell	*Buglossoides arvensis*
corn speedwell	*Veronica arvensis*
corn spurry	*Spergula arvensis*
cornflower	*Centaurea cyanus*
cowcockle	*Vaccaria hispanica*
crack willow	*Salix fragilis*
cranberry viburnum, European highbush cranberry	*Viburnum opulus ssp. opulus*
creeping bentgrass	*Agrostis stolonifera*
creeping buttercup	*Ranunculus repens*
creeping yellow loosestrife, creeping Jenny	*Lysimachia nummularia*
cultivated currant	*Ribes rubrum*
curly dock	*Rumex crispus*
curly dock	*Rumex crispus ssp. crispus*
curly leaf pondweed	*Potamogeton crispus*
cutleaf blackberry	*Rubus laciniatus*
cutleaf evening-primrose	*Oenothera laciniata*

Common Name	Scientific Name
cutleaf teasel	*Dipsacus laciniatus*
cypress spurge	*Euphorbia cyparissias*
dames rocket	*Hesperis matronalis*
dandelion	*Taraxacum officinale*
Deptford pink	*Dianthus armeria*
devil's-claw	*Proboscidea louisianica*
dodder	*Cuscuta spp.*
dog rose	*Rosa canina*
dotted smartweed	*Persicaria punctata*
doubtful knight's-spur	*Consolida ajacis*
dwarf snapdragon	*Chaenorhinum minus*
Dyer's woad	*Isatis tinctoria*
eastern poison-ivy	*Toxicodendron radicans*
eastern redcedar	*Juniperus virginiana*
eastern white pine	*Pinus strobus*
eclipta	*Eclipta prostrata*
elecampane	*Inula helenium*
English ivy	*Hedera helix*
Eurasian watermilfoil	*Myriophyllum spicatum*
European black alder	*Alnus glutinosa*
European columbine	*Aquilegia vulgaris*
European common reed, Phragmites	*Phragmites australis ssp. australis*
European cranberrybush	*Viburnum opulus*
European privet	*Ligustrum vulgare*
European red raspberry	*Rubus idaeus*
European stinging nettle	*Urtica dioica ssp. dioica*
European vervain	*Verbena officinalis*
European water-clover	*Marsilea quadrifolia*
everlasting peavine	*Lathyrus latifolius*
fall dandelion	*Scorzoneroides autumnalis*
fall panicum	*Panicum dichotomiflorum*
false spiraea	*Sorbaria sorbifolia*
false strawberry	*Potentilla indica*
feverfew	*Tanacetum parthenium*
field bindweed	*Convolvulus arvensis*
field brome	*Bromus arvensis*
field dodder	*Cuscuta pentagona*
field horsetail	*Equisetum arvense*
field madder	*Sherardia arvensis*
field pennycress	*Thlaspi arvense*
field pepperweed	*Lepidium campestre*
field thistle	*Cirsium discolor*

Common Name	Scientific Name
fiveangled dodder	*Cuscuta pentagona var. pentagona*
fortune meadowsweet	*Spiraea japonica var. fortune*
foxglove	*Digitalis purpurea*
foxtail millet	*Setaria italica*
garden catchfly	*Silene armeria*
garden cosmos	*Cosmos bipinnatus*
garden vetch	*Vicia sativa ssp. nigra*
garlic mustard	*Alliaria petiolate*
germander speedwell	*Veronica chamaedrys*
giant chickweed	*Myosoton aquaticum*
giant foxtail	*Setaria faberi*
giant knotweed	*Reynoutria sachalinensis*
giant ragweed	*Ambrosia trifida*
giantseed goosefoot	*Chenopodium simplex*
glossy buckthorn	*Frangula alnus*
goldenrain tree	*Koelreuteria paniculate*
goosegrass	*Eleusine indica*
goutweed	*Aegopodium podagraria*
grassy arrowhead	*Sagittaria graminea*
greater celandine	*Chelidonium majus*
green bristlegrass	*Setaria viridis var. viridis*
green foxtail	*Setaria viridis*
ground ivy	*Glechoma hederacea*
hairy bittercress	*Cardamine hirsute*
hairy cat's ear	*Hypochaeris radicata*
hairy galinsoga	*Galinsoga quadriradiata*
hairy vetch	*Vicia villosa*
hairy willowherb	*Epilobium hirsutum*
halberdleaf orach	*Atriplex patula*
hedge bindweed	*Calystegia sepium*
hedge mustard	*Sisymbrium officinale*
hedgehog dogtailgrass	*Cynosurus echinatus*
helleborine	*Epipactis helleborine*
hemp dogbane	*Apocynum cannabinum*
henbit	*Lamium amplexicaule*
high mallow	*Malva sylvestris*
highbush blackberry	*Rubus argutus*
hollyhock	*Alcea rosea*
hop clover	*Trifolium aureum*
horsenettle	*Solanum carolinense*
houndstongue	*Cynoglossum officinale*
Indian mustard	*Brassica juncea*

Common Name	Scientific Name
ivyleaf morning-glory	*Ipomoea hederacea*
ivyleaf speedwell	*Veronica hederifolia*
Japanese barberry	*Berberis thunbergia*
Japanese clover	*Kummerowia striata*
Japanese flowering crabapple	*Malus floribunda*
Japanese hedge-parsley, erect hedgeparsley	*Torilis japonica*
Japanese honeysuckle	*Lonicera japonica*
Japanese hop	*Humulus japonicus*
Japanese knotweed	*Reynoutria japonica*
Japanese spiraea	*Spiraea japonica*
Japanese stiltgrass	*Microstegium vimineum*
jetbead	*Rhodotypos scandens*
jimsonweed	*Datura stramonium*
johnsongrass	*Sorghum halepense*
Kentucky bluegrass	*Poa pratensis*
knotroot foxtail	*Setaria parviflora*
Korean lespedeza	*Kummerowia stipulacea*
kudzu	*Pueraria montana var. lobata*
Kummerowia	*Kummerowia spp.*
ladysthumb	*Persicaria maculosa*
lambsquarters	*Chenopodium album*
large crabgrass	*Digitaria sanguinalis*
large gray willow	*Salix cinerea*
large hop clover	*Trifolium campestre*
largeseed falseflax	*Camelina sativa*
lemon balm	*Melissa officinalis*
lesser celandine, fig buttercup	*Ficaria verna*
lettuce	*Lactuca sativa*
lily of the valley	*Convallaria majalis*
little starwort	*Stellaria graminea*
Lombardy poplar	*Populus nigra*
longleaf groundcherry	*Physalis longifolia*
longleaf speedwell	*Pseudolysimachion longifolium*
longspine sandbur	*Cenchrus longispinus*
longstalk cranesbill	*Geranium columbinum*
low cudweed	*Gnaphalium uliginosum*
Mahaleb cherry	*Prunus mahaleb*
marsh-pepper smartweed	*Persicaria hydropiper*
meadow brome	*Bromus erectus*
meadow fescue	*Festuca pratensis*
meadow foxtail	*Alopecurus pratensis*
meadow hawkweed	*Hieracium caespitosum*

Common Name	Scientific Name
meadow salsify	*Tragopogon lamottei*
memorial rose	*Rosa lucieae*
mexicantea	*Dysphania ambrosioides*
mimosa	*Albizia julibrissin*
moist sowthistle	*Sonchus arvensis ssp. uliginosus*
Morrow's honeysuckle	*Lonicera morrowii*
moth mullein	*Verbascum blattaria*
motherwort	*Leonurus cardiaca*
mouse-eared hawkweed	*Pilosella officinarum*
mugwort	*Artemisia vulgaris*
multiflora rose	*Rosa multiflora*
musk mallow	*Malva moschata*
musk thistle, nodding thistle	*Carduus nutans*
narrow-leaved cattail	*Typha angustifolia*
nettleleaf goosefoot	*Chenopodium murale*
nimblewill	*Muhlenbergia schreberi*
nipplewort	*Lapsana communis*
nodding star-of-Bethlehem	*Ornithogalum nutans*
northern catalpa	*Catalpa speciosa*
northern white cedar	*Thuja occidentalis*
Norway maple	*Acer platanoides*
Norway spruce	*Picea abies*
orange hawkweed	*Pilosella aurantiaca*
orchardgrass	*Dactylis glomerata*
oriental bittersweet	*Celastrus orbiculatus*
Oriental lady's thumb	*Persicaria longiseta*
Oriental lady's thumb	*Polygonum posumbu*
osage-orange	*Maclura pomifera*
oxeye daisy	*Leucanthemum vulgare*
pale dock	*Rumex latissimus*
pale smartweed	*Polygonum lapathifolium*
pale yellow iris, yellow flag iris	*Iris pseudacorus*
panicled hydrangea	*Hydrangea paniculate*
paradise apple	*Malus pumila*
parrotfeather	*Myriophyllum aquaticum*
peach	*Prunus persica*
peppermint	*Mentha x piperita*
perennial ryegrass	*Lolium perenne*
perennial ryegrass	*Lolium perenne ssp. perenne*
perennial sowthistle	*Sonchus arvensis*
perilla mint	*Perilla frutescens*
periwinkle	*Vinca spp.*

Common Name	Scientific Name
Persian speedwell	*Veronica persica*
piedmont bedstraw	*Cruciata pedemontana*
pineapple-weed	*Matricaria discoidea*
poison hemlock	*Conium maculatum*
poison-sumac	*Toxicodendron vernix*
poverty brome	*Bromus sterilis*
prairie sunflower	*Helianthus petiolaris*
prickly lettuce	*Lactuca serriola*
princess-feather	*Persicaria orientalis*
princesstree	*Paulownia tomentosa*
privet	*Ligustrum spp.*
prostrate knotweed	*Polygonum aviculare*
prostrate pigweed	*Amaranthus blitoides*
purple crown-vetch	*Securigera varia*
purple cudweed	*Gamochaeta purpurea*
purple deadnettle	*Lamium purpureum*
purple loosestrife	*Lythrum salicaria*
quackgrass	*Elymus repens*
Queen Anne's lace, wild carrot	*Daucus carota*
queen-of-the-meadow	*Filipendula ulmaria*
rabbitfoot clover	*Trifolium arvense*
radish	*Raphanus sativus*
rapeseed	*Brassica napus*
red clover	*Trifolium pratense*
red fescue	*Festuca rubra*
red morning-glory	*Ipomoea coccinea*
red sorrel	*Rumex acetosella*
redroot pigweed	*Amaranthus retroflexus*
redsepal evening-primrose	*Oenothera glazioviana*
redstem filaree	*Erodium cicutarium*
redstem stork's bill	*Erodium cicutarium ssp. cicutarium*
redtop	*Agrostis gigantea*
reed canarygrass	*Phalaris arundinacea*
rock dandelion	*Taraxacum erythrospermum*
rose campion	*Silene coronaria*
rose of Sharon	*Hibiscus syriacus*
roughstalk bluegrass	*Poa trivialis*
Russian thistle	*Salsola tragus*
rye brome	*Bromus secalinus*
salad burnet	*Sanguisorba minor*
scarlet pimpernel	*Anagallis arvensis*
Scotch broom	*Cytisus scoparius*

Common Name	Scientific Name
Scots pine	*Pinus sylvestris*
Seaside rose	*Rosa rugosa*
sensitive partridgepea	*Chamaecrista nictitans*
sericea lespedeza	*Lespedeza cuneata*
sheep fescue	*Festuca trachyphylla*
shepherd's-purse	*Capsella bursa-pastoris*
showy fly honeysuckle, Bell's honeysuckle	*Lonicera x bella*
shrubby lespedeza	*Lespedeza bicolor*
Siberian elm	*Ulmus pumila*
slender meadow foxtail	*Alopecurus myosuroides*
small carpetgrass, joint-head grass	*Arthraxon hispidus*
small hop clover	*Trifolium dubium*
smallflower galinsoga	*Galinsoga parviflora*
smallseed falseflax	*Camelina microcarpa*
smooth bedstraw	*Galium mollugo*
smooth brome	*Bromus inermis*
smooth cat's ear	*Hypochaeris glabra*
smooth hawksbeard	*Crepis capillaris*
sneezewort yarrow	*Achillea ptarmica*
sorghum (type unspecified)	*Sorghum bicolor*
southern catalpa	*Catalpa bignonioides*
spanishneedles	*Bidens bipinnata*
spearmint	*Mentha spicata*
spiny plumeless thistle	*Carduus acanthoides*
spiny sowthistle	*Sonchus asper*
splitlip hempnettle	*Galeopsis bifida*
spotted deadnettle	*Lamium maculatum*
spotted knapweed	*Centaurea stoebe ssp. micranthos*
spotted spurge	*Euphorbia maculate*
spotted waterhemlock	*Cicuta maculate*
spring whitlowgrass	*Draba verna*
star-of-Bethlehem	*Ornithogalum umbellatum*
starch grape hyacinth	*Muscari neglectum*
sticky chickweed	*Cerastium glomeratum*
stinging nettle	*Urtica dioica*
stinkgrass	*Eragrostis cilianensis*
stinking chamomile	*Anthemis cotula*
sulfur cinquefoil	*Potentilla recta*
sulphur cosmos	*Cosmos sulphureus*
sweet alyssum	*Lobularia maritima*
sweet autumn virginsbower	*Clematis terniflora*
sweet cherry	*Prunus avium*

Common Name	Scientific Name
sweet vernalgrass	*Anthoxanthum odoratum*
sweetbriar	*Rosa rubiginosa*
sweetwilliam	*Dianthus barbatus*
tall buttercup	*Ranunculus acris*
tall fescue	*Festuca arundinacea*
tall lettuce	*Lactuca canadensis*
tall morning-glory	*Ipomoea purpurea*
tall oatgrass	*Arrhenatherum elatius*
tall thistle	*Cirsium altissimum*
Tatarian honeysuckle	*Lonicera tatarica*
tawny daylily	*Hemerocallis fulva*
thymeleaf sandwort	*Arenaria serpyllifolia*
thymeleaf speedwell	*Veronica serpyllifolia*
thymeleaf speedwell	*Veronica serpyllifolia ssp. serpyllifolia*
timothy	*Phleum pratense*
toothed spurge	*Euphorbia dentata*
tree-of-heaven	*Ailanthus altissima*
true forget-me-not	*Myosotis scorpioides*
tumble mustard	*Sisymbrium altissimum*
twoleaf watermilfoil	*Myriophyllum heterophyllum*
velvetleaf	*Abutilon theophrasti*
Venice mallow	*Hibiscus trionum*
Virginia groundcherry	*Physalis virginiana var. virginiana*
Virginia pepperweed	*Lepidium virginicum*
wallflower mustard	*Erysimum cheiranthoides*
waterpurslane	*Ludwigia palustris*
weeping lovegrass	*Eragrostis curvula*
weeping willow	*Salix babylonica*
western salsify	*Tragopogon dubius*
white campion	*Silene latifolia*
white clover	*Trifolium repens*
white cockle	*Silene latifolia ssp. alba*
white horehound	*Marrubium vulgare*
white mulberry	*Morus alba*
white poplar	*Populus alba*
white sweetclover	*Melilotus albus*
white willow	*Salix alba*
wild buckwheat	*Fallopia convolvulus*
wild four-o'clock	*Mirabilis nyctaginea*
wild garlic	*Allium vineale*
wild mustard	*Sinapis arvensis*
wild oat	*Avena fatua*

Common Name	Scientific Name
wild onion	*Allium canadense*
wild parsnip	*Pastinaca sativa*
wild radish	*Raphanus raphanistrum*
willowleaf lettuce	*Lactuca saligna*
wine raspberry	*Rubus phoenicolasius*
winged burning bush	*Euonymus alatus*
winter creeper	*Euonymus fortune*
Wisconsin weeping willow	*Salix x penduline*
wisterias	*Wisteria spp.*
woodland strawberry	*Fragaria vesca*
yellow bedstraw	*Galium verum*
yellow daylily	*Hemerocallis lilioasphodelus*
yellow fieldcress	*Rorippa sylvestris*
yellow foxtail	*Setaria pumila*
yellow groove bamboo	*Phyllostachys aureosulcata*
yellow hornpoppy	*Glaucium flavum*
yellow nutsedge	*Cyperus esculentus*
yellow rocket	*Barbarea vulgaris*
yellow sweet-clover	*Melilotus officinalis*
yellow toadflax	*Linaria vulgaris*
yellow woodsorrel	*Oxalis stricta*

Data taken from EDDMaps status of invasive species report on a county level.
(www.eddmaps.org/)

Essential Fish Habitat

None for WV

Data taken from National Oceanic and Atmospheric Administration (NOAA).
(https://habitat.noaa.gov/appa/efhmapper/?page=page_3)